

**REVIEWED: 13-INCH MACBOOK AIR AND
13-INCH MACBOOK PRO WITH RETINA DISPLAY**

Macworld

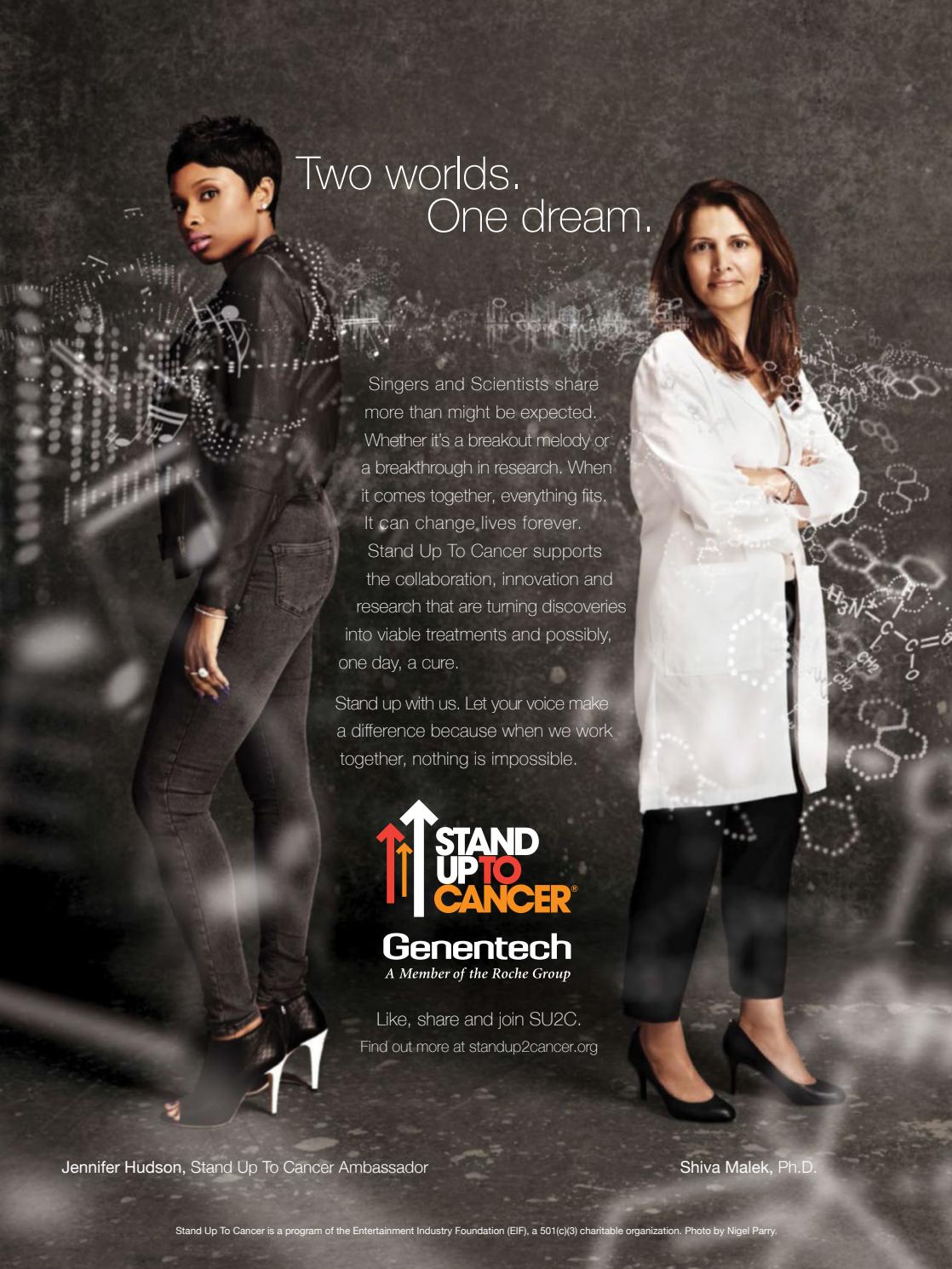
JULY 2015

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POWER PLAY:

WHICH APPLE
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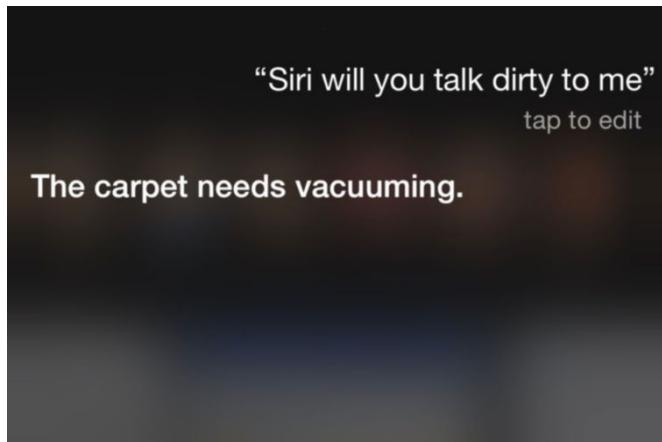
Like, share and join SU2C.
Find out more at standup2cancer.org

Jennifer Hudson, Stand Up To Cancer Ambassador

Shiva Malek, Ph.D.



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Apple reveals OS X 10.11 El Capitan, promising better speed and other upgrades

From pinning web pages to showing multiple desktops, this OS X upgrade includes welcome improvements to Safari, Mail, and more.

BY GLENN FLEISHMAN

A

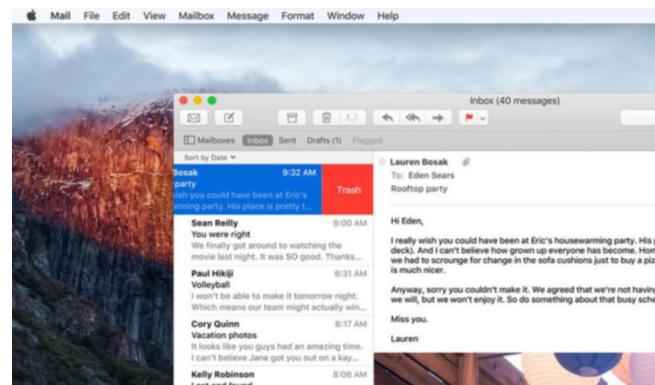
pple has brought Yosemite to the mountain: El Capitan, specifically, which is the name of OS X 10.11 as well as a peak in Yosemite National Park. Revealed at Apple's Worldwide Developers Conference in San Francisco, El Capitan is intended to reach a higher point, but not dig new ground.

Craig Federighi, Apple's senior vice president of software engineering, emphasized the release is about an improvement in experience and performance. El Capitan's ([go. macworld.com/elcapitan](http://macworld.com/elcapitan)) announcement focused on small points of irritation and big bumps in efficiency.

NEW OPTIONS

Safari adds pinning, letting users keep particular pages readily available. The sites will be regularly updated in the background to keep them up to date. In a feature that received plenty of applause among the audience, Safari will now make it easy to reveal which tab or tabs is playing sound, and let audio be muted with a single click in its tab. Safari can now push web video to Apple TV as an isolated stream, showing just that content and not the entire desktop.

Apple emphasized new gestures that borrow from iOS, such as swiping left in Mail to reveal a Delete button that can be tapped. In Mission Control, a three-finger upward swipe



reveals every desktop window in a single layer. Any window in Mission Control can be dragged to the top of the screen to create a new desktop space.

Federighi also showed off in Mail a new option for hiding windows within an app without minimizing them. Switching to the inbox minimizes a message you're composing to the bottom of the screen with its window bar showing. An image can be dragged from a message being viewed on screen into the docked window. Mail also provides better hooks into calendars and contacts,

MORE iOS gestures have come to OS X, including swipe left to delete in Mail.



and allows tabbed windows to manage different email threads.

The new release provides better options for working among multiple apps with improved use of full-screen mode, especially with 16:9 ratio and similarly broad monitors. Clicking and dragging the green window-resize button uses Exposé to show other available apps. Drop onto another app, and El Capitan creates a full-screen, side-by-side working view of both.

SPOTLIGHT ON INNOVATION

Little features also receive small and large tweaks. The Spotlight results window can be resized and moved—Federighi joked “that’s innovation!” But Spotlight now encompasses more natural-language queries, like “documents I worked on last June.” Spotlight also encompasses more up-to-date information, including weather,

video results from the Internet, transit information, and, Apple’s constant on all platforms, stocks.

The Photos app now supports third-party editing tools, and will sport minor interface improvements that Yosemite users will seemingly have to wait for and upgrade to get. Geotagging, available in iPhoto and absent in Photos 1.0, will return in Photos for El Capitan, as well as better handling of Faces.

Wiggling one’s finger on a trackpad or shaking a mouse enlarges the cursor on screen to make it more easily visible, useful on a Retina screen for which a higher-density display option was chosen. Maps adds long-awaited transit directions, which can be pushed to an iPhone. And the old standby Notes, the butt of many jokes, gets a refresh. It can now handle media, URLs, and map locations alongside text, and sync via

EL CAPITAN puts more power into creating desktops in a revised Spaces Bar.

iCloud across all iOS and OS X devices you use with the same account.

NO SPEED LIMIT

Apple also emphasized performance improvements to address ongoing complaints about delays, spinning cursors, and other odd lags in speed in Yosemite, sometimes in comparison to previous releases of OS X. Federighi said that apps will launch up to 1.4 times faster, switching between apps will be twice as fast, and PDFs will open in Preview four times as fast.

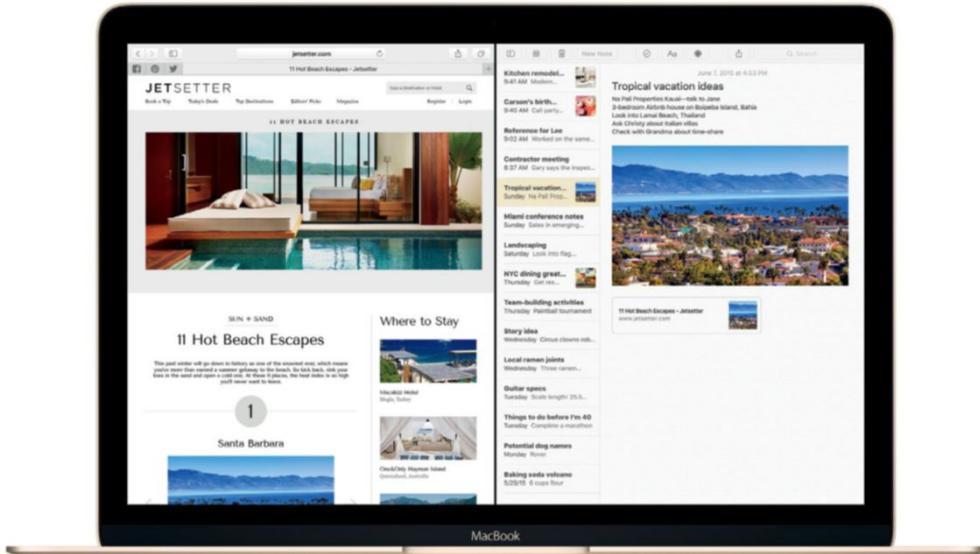
On the graphics side, Apple is bringing its Metal framework to OS X, making graphics rendering 40 percent more efficient. For games,

drawing performance can be ten times faster. Game developer Epic showed a Metal-based game it built, called Fortnite (fortnite.com), and said its developers saw a 70-percent reduction in CPU use compared to OpenGL.

On the professional production side, Federighi said that Adobe was able to pull an eightfold improvement in After Effects rendering. Adobe is committed to adopting Metal across its OS X apps, he said.

The new version is available to developers now and in a public beta (go.macworld.com/applebeta) in July. It will ship to users in the fall as a free upgrade. ■

EL CAPITAN
OS X 10.11 will ship to users as a free upgrade this fall.





How to run advanced Spotlight searches in the Finder

Spotlight searches in OS X Yosemite's Finder comes with tools to hone your searches and help you find what you need.

BY KIRK MCELHEARN

S

potlight, Apple's search technology, has been available on Macs since Mac OS X 10.4, back in 2005. For many years it remained relatively stable, offering no new features. But with OS X Yosemite, Apple added a slew of new search results to Spotlight.



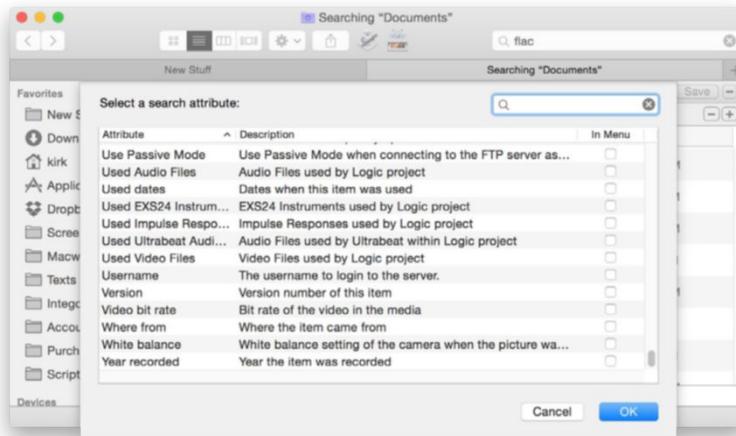
If you use Spotlight, you may only invoke it to search for, say, contacts or emails, or the occasional file. But Spotlight can search for much more: it can search the web, find information on Wikipedia, convert pounds to grams (or dollars), define words, and more.

In other articles, I've looked at Spotlight basics (go.macworld.com/spotbasics) and have shown you how to construct search queries (go).

macworld.com/spotqueries) with Spotlight. In this article, I move from Spotlight to the Finder, and show you how to perform even more advanced searches.

When you search in the Finder, you're actually searching the Spotlight index on your disk; you just perform your searches from the Finder's search field instead of the Spotlight menu. And, when you move to the Finder, you have even more power to search.

PRESS COMMAND-F to open a search window in the Finder. You can limit your search to the folder you're in when you start the search, or expand it to include the contents of your entire Mac.



WHEN YOU SELECT Other from the first menu, you'll see a list of all the file attributes Spotlight recognizes. To make one of these items appear in the main menu, place a checkmark to the right of its name.

START A FINDER SEARCH

There are several ways to access Spotlight in the Finder. You can open a Finder window and click in the search field at the top, or you can press Command-F to convert any open Finder window into a search window.

You can also access the Finder window search after you've started a query in the Spotlight menu (useful if you've got too many results). Simply scroll down in the results list until you get to the bottom and click Show All in the Finder; Spotlight will open a new Finder window showing the results of your search.

If the Finder displays your search results in Icon view, you'll probably want to switch to List view to get a better look at your results. You can

then select the column headers to sort by name, kind, or date. If you want more column headers visible, press Command-J and select other columns from the View Options window.

HONE YOUR SEARCH

The Finder window's search bar contains several options for tailoring your results. When you start typing search terms, the Finder pops up a menu asking if you want to restrict your search terms to file names only. And you can click on This Mac to change the target of your search from the folder you were in when you started searching, to the contents of your entire Mac.

ADD CRITERIA

On the right side of the Finder

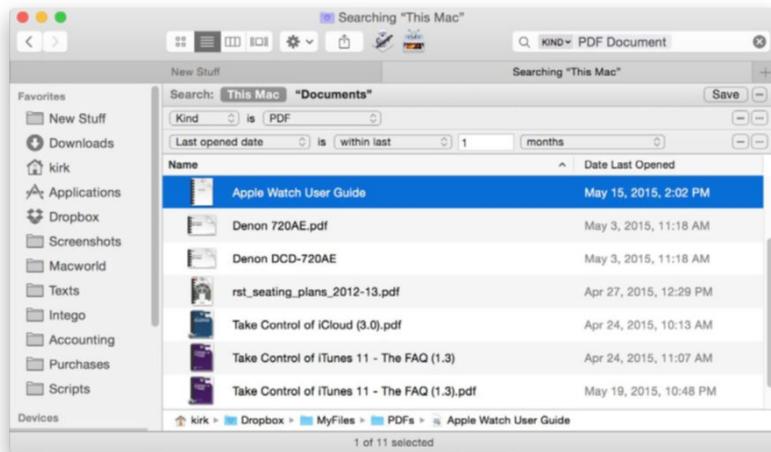
window's search bar is a plus-sign button. Click it to display two menus; by default, the first is set to Kind, and the second is set to Any. But there are other options to choose from.

To narrow down your results, start by selecting one of the criteria in the first menu, such as Created Date, Last Opened Date, or Name. Or choose Other to call dozens of other options, including Authors, Audio Bit Rate, Email Addresses, Recipients (people who received a certain file), Layers (names of Photoshop layers), and much more. Click on the check box next to an item if you want it to appear in the first menu for easy access in the future. As you select different options, the second menu changes dynamically so you can set the appropriate parameters (such as

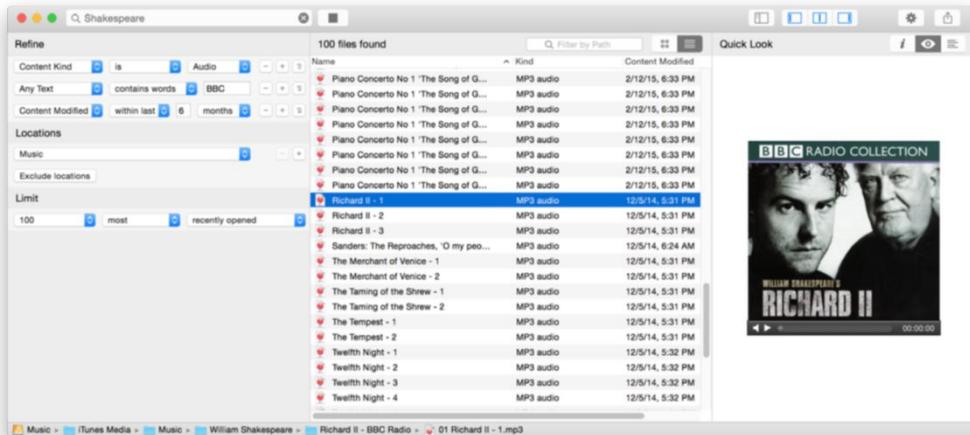
YOU CAN USE QUOTES TO SPECIFY THAT A SEARCH SHOULD LOOK AT THE EXACT PHRASE YOU TYPE

dates, numbers, and so on).

If you're looking for a particular type of file, keep the first menu set to Kind, and use the Any menu to select from Images, Documents, Movies, and more. (It's the same as using the kind: keyword, which I discussed in [How to create good queries in Yosemite's Spotlight](#) ([go.macworld.com/spotqueries](http://macworld.com/spotqueries)), only you don't need to remember the keywords or manually enter them.) You can access more file types by choosing Other from the Any menu and then entering a kind of file in



THIS SEARCH COLLECTS all the PDF files opened in the past month. When you're done, you can click on Save to store the search in the sidebar for future use.



the text field, such as Excel or MP3.

COMBINE MULTIPLE QUERIES

Sometimes a search requires more than one set of criteria to summon the results you want. Finder window searches let you specify as many parameters as you want. Say you want to search for all PDF documents you've opened in the past month. To do this, leave the first menu set to Kind, and set the Any menu to PDF. Click on the plus sign in the search bar to add another search parameter. Set this one to Last Opened Date Is Within Last, enter 1 in the box, and select Months from the last menu. Spotlight will display all PDF files you created or updated within the past month.

Although it's not obvious, you can use quotes to specify that a search

should look at the exact phrase you type; just type quotes around your search terms. You can also use Boolean search terms to set up a Finder search, to exclude criteria or to create an OR search. Once you have one condition set up, you can add a Boolean term to your next condition by option-clicking the plus sign. The plus sign will turn into an ellipsis (...), and you'll get a new pull-down menu with options for Any (OR), All (AND), or None (NOT).

SAVE SEARCHES FOR LATER

What if you plan to search for recently created and updated Word files once a month, so you can back them up? There's no reason to manually type the same commands every time. You can save yourself some work by preserving the

HOUDAHSPOT CAN
perform complex
searches using your
Mac's Spotlight
indices. You can even
preview your files in
the Quick Look pane.

searches you run regularly as smart folders.

To save your current search as a smart folder, click on the Save button in the search bar, enter a name for the folder, and select a location to save it in. Enable the Add To Sidebar option if you want to make your smart folder a permanent fixture in that locale. Whenever you open this smart folder, Spotlight will run the search again and update the results with all files that fit the criteria.

If you want to change your search, or add or remove criteria, simply open the smart folder, click the action button (the gear icon), and select Show Search Criteria.

WHEN SPOTLIGHT ISN'T ENOUGH

You may feel that the above isn't very user-friendly. It's a bit finicky to mess with all those menus and criteria. If you want a better way to

search your Mac with Spotlight, a third-party app such as \$29 HoudahSpot (go.macworld.com/houdahspot) might be for you. HoudahSpot accesses your Spotlight indices, searching exactly the same way as the Spotlight menu or Finder windows. But it brings the power of advanced searches front and center. Instead of needing to learn arcane keywords and remembering Boolean operators, HoudahSpot lets you access complex searches using a series of menus.

HoudahSpot also lets you save searches as templates, so you can access them again at any time.

Spotlight is very powerful. With everything you've learned here and in the articles I've linked to within this one, you'll be able to find any file on your Mac, no matter where it's hiding. Take some time to learn how to make complex Spotlight queries, and you'll find files in seconds. ■



What Jony Ive's new job means for Apple design

The company's first ever Chief Design Officer will play a bigger role than ever.

BY CAITLIN MCGARRY

Without designer Jony Ive, Apple as the world knows it wouldn't exist. Macs, iPhones, and iPads certainly wouldn't be as iconic without Ive's industrial magic. The Cupertino company has always prized Ive's skills, but now the former senior VP of design is joining CEO Tim Cook and CFO Luca Maestri in the C-suite as Apple's first ever Chief Design Officer.

Ive established a signature look for Apple's core device lineup and ushered in a new product category this year with Apple Watch. In his new role, which takes effect July 1 and was announced in a memo (go.macworld.com/ives-cdo) from Cook to Apple employees as well as a glowing profile of Ive in *The Telegraph*, the design chief can focus his ambitions on high-level, grand-scale design projects like Apple headquarters, and perhaps even a car.

CHANGES FOR HARDWARE AND SOFTWARE

Ive has long held a pivotal role within Apple, and Cook, in his employee memo, said Ive's new title is "a reflection of the scope of work he has been doing at Apple for some time." Ive now holds close to 5,000 patents on designs he has created at the company.

"He's not just a designer. That's why he works directly for me," former Apple CEO Steve Jobs said of Ive in Walter Isaacson's 2011 biography.

"He has more operational power than anyone else at Apple except me. There's no one who can tell him what to do, or to butt out. That's the way I set it up."

Ive already controlled all of Apple product hardware and software



design, a role he assumed after software chief Scott Forstall left the company in 2012. That job came with a senior vice president title. His new role affords him an even bigger impact on Apple design—and not just its devices—but also gives more

IVE IS OVERSEEING the design of Apple's brand new campus.



design control to new VP of Industrial Design Richard Howarth and new VP of User Design Alan Dye, who have both worked with Ive on Apple design for years. Dye's role in the Apple Watch's software design was detailed in a recent *New Yorker* profile of Ive, and Howarth is credited with guiding the design of the original iPhone. The two will handle the daily management responsibilities of their respective teams, freeing Ive from the necessary drudgery of administrative work.

IVE'S NEXT MOVE

Some have speculated that Apple is establishing Dye and Howarth as Ive's potential successors, which makes sense. Ive has been at this for a long time, and might want to exit on a high note in the next few years. But for now, he plans to travel

more, turning his attention to new Apple Stores, which are growing ever more grandiose in their designs, and the under-construction Apple Campus 2 in Cupertino. According to *The Telegraph*, Ive has his hand in every design detail of the new headquarters, including the desks and chairs employees will use.

In the *New Yorker* profile earlier this year, Ive described the design of the building's staircases, the elevator control panels, the employee security-card readers—minute details you wouldn't expect from a Chief Design Officer, but that Ive clearly relishes. He would rather design than be a middle layer of management. ■

HE HAS MORE OPERATIONAL POWER THAN ANYONE ELSE AT APPLE EXCEPT ME.

You might know **Joshua**.

He loves video games, and he owns enough to know they're not all meant for kids. That's why he reminds his friends (at least the ones that have kids) that they all have **big black letters on the box** to help parents find the ones that are best for their families.

You can learn about those ratings at **ESRB.org**



Reviews

The Latest Mac Products
Reviewed & Rated



MAC GEMS ARE APPS THAT OFFER STANDOUT UTILITY OR UNIQUE FEATURES AT A GREAT PRICE.



UTILITY SOFTWARE

CLEANMYMAC 3: MAKE MORE ROOM ON YOUR CROWDED HARD DRIVE

BY CHRIS BARYLICK

CLEANMYMAC 3 IS the new version of MacPaw's catch-all utility to scan your Mac and remove gigabytes of assorted kerfuffle and gunk that builds up over time.

Like its previous versions, CleanMyMac 3 (macpaw.com/cleanmymac) wraps itself around a series of tests and services and works to remove generally unused, developer-oriented, extraneous, and backup files associated with your most commonly used applications that take up available disk space. CleanMyMac 3's selection of available tests has grown to add tools such as an uninstaller, general maintenance, online privacy functions, and file shredder to its previous suite of tests. This is on top of the Smart Cleanup, System Junk, iPhoto Junk, Mail Attach-

CLEANMYMAC 3.0



AT A GLANCE:

If you're constantly trying to find ways to get more storage space on your Mac, CleanMyMac could be a good investment.

PROS:

- Easy to use.
- Lots of options to find unnecessary files.

CONS:

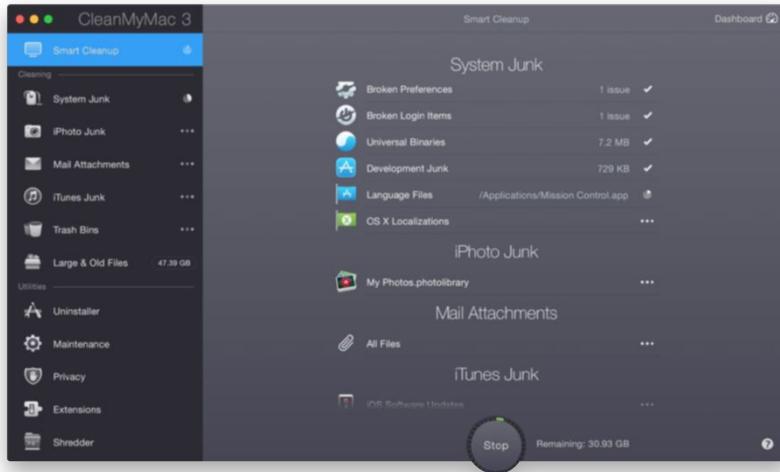
- Unexpected default behavior with application interrupts.

PRICE:

\$40; \$20 upgrade

COMPANY:

macpaw.com



IF YOU don't feel like dealing with the fine details of your cleaning, you can use CleanMyMac 3's Smart Cleanup.

ments, iTunes Junk, Trash Bins, and Large and Old Files scans that comprise the cleaning utilities and work to make CleanMyMac 3 your intended catch-all Mac utility of choice.

All of these tests can be customized and configured as needed—and with a better preference layout than found in CleanMyMac 2. Where a given test might tell you that you can save a certain number of gigabytes by deleting files, CleanMyMac 3 gives you fine control as to which files are deleted.

CleanMyMac 3 adds several new scans and tests, but the overall product still holds together; the new features don't feel bolted on and the app doesn't feel overly bloated. The tests can be configured, there's a good range of preferences, and nice touches like extensive information about your Mac's hardware (including a health status for your hard drives, remaining battery life for a notebook, and available RAM) show good attention to detail. Additional features like a scheduler allow you to designate when you'll be reminded to run tests (and the tests themselves work as advertised—the new uninstaller coming in handy with removing assorted programs).

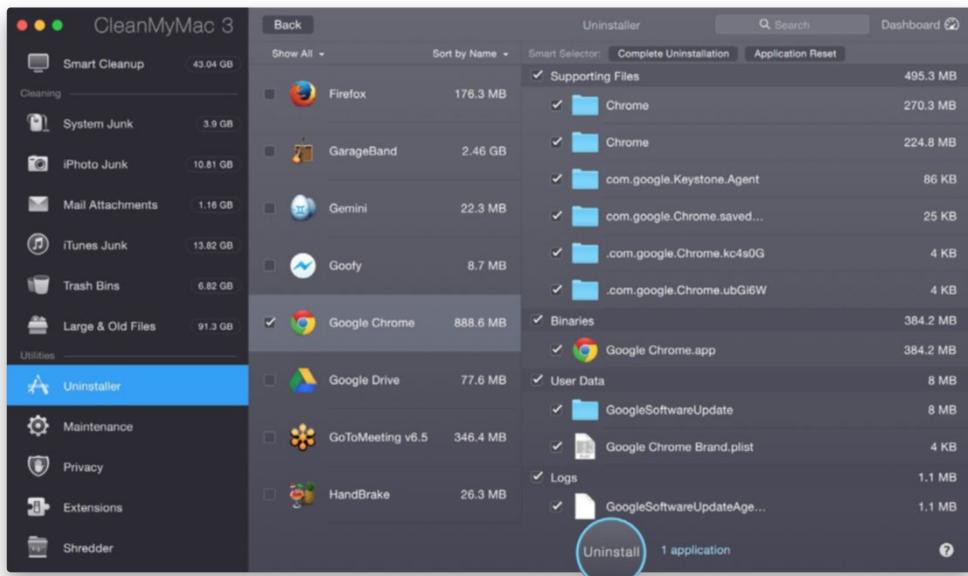
CleanMyMac 3 comes in handy in a world filled with incredibly fast but still relatively small solid-state drives, where regaining a dozen or so gigabytes of space certainly isn't a bad thing. On my late 2013 model

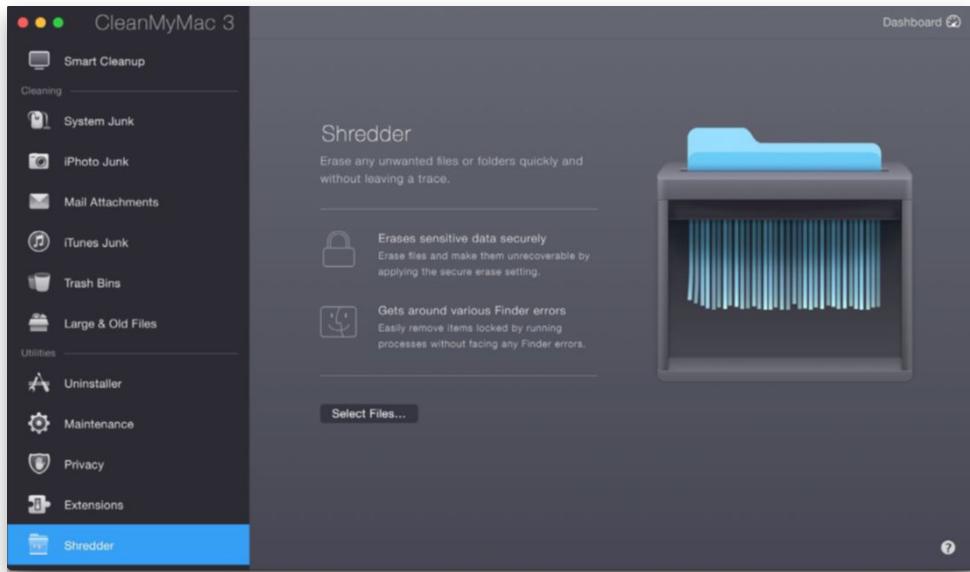
Mac Pro, with its minimal 256GB flash storage, CleanMyMac 3 was able to retrieve 18.1GB of storage space, and the computer ran without a hitch afterward.

To its credit, MacPaw took the CleanMyMac 2's more-frenetic-than-a-happy-puppy user interface and dialed it down a bit, which makes it a bit more helpful in this new version. Each test function now includes a brief explanation as to what the test does and what it repairs. This doesn't go into developer-level explanations, but it serves to tell you what you're about to do and what changes will be made, giving you sufficient information prior to clicking the Scan or Clean button.

This dovetails nicely with the program's access to preference files and settings that might be a little hard for a casual user to find. For example, the Privacy module allows easy access to cookies, saved passwords, and other preferences for your web browser of choice, saving you some digging around in preference and extension menus by putting these things in one location.

WHEN YOU remove an app, CleanMyMac 3's uninstaller makes sure you're not leaving any app files behind.





If there is one caveat, it's that CleanMyMac 3 attempted to launch itself during the interrupt screens that sometimes come up when running another application. This was easily worked around by configuring the preferences to ignore these interrupts, but it's also a behavior I've never seen before.

SECURELY ERASE files with CleanMy Mac 3's new shredder.

BOTTOM LINE

CleanMyMac 3 is in a tough, competitive field against other all-in-one spring-cleaning utilities for the Mac, including the oft-hated MacKeeper. And one could argue that its end results achieve what assorted free-ware/shareware utilities could do at a price of \$40 for new users and \$20 for upgrade users. Still, it's nice to be able to remove gigabytes of kerfuffle from your Mac; the program and its tests work well, and it can be readily configured as needed. It's worth your consideration. ■



PRODUCTIVITY

BUSYCONTACTS KEEPS YOUR CONTACTS CLOSE, AND SOCIAL MEDIA FEEDS EVEN CLOSER

BY JEFFERY BATTERSBY

KEEPING YOUR CONTACTS WRANLED can be a challenge, especially when you have to hop between Mail, your calendar, your contacts, and social media apps to keep tabs on everything that might be going on in your personal orbit. BusyContacts, a new contact-manager-cum-customer-relationship-manager from the folks at BusyMac, attempts to simplify and centralize all your contact needs into a single app, helping you keep tabs on everyone without having to leave the BusyContacts app.

BusyContacts works its magic by linking to and collecting information from Apple's Mail, Contacts, and Messages apps, and your social media accounts, gathering that information into a single, multipaned

BUSYCONTACTS 1.0.2



AT A GLANCE:

BusyContacts is a contact manager for OS X that makes creating, finding, and managing contacts more efficient.

PROS:

- Links contact information with email and social media accounts
- Integrates well with BusyCal
- Tracks all your contact information in one application

CONS:

- Need BusyCal to fully integrate your calendar
- A few interface quirks

PRICE:

\$50; \$80 for bundle with BusyCalendar.

COMPANY:

busymac.com

window that lets you select a contact and see your personal interactions with them as well as their social media feeds.

While BusyContacts is great at using OS X's existing apps for most of this integration, there's one small and somewhat annoying caveat when it comes to calendar info: If you want to pull your upcoming schedule into the application, you're

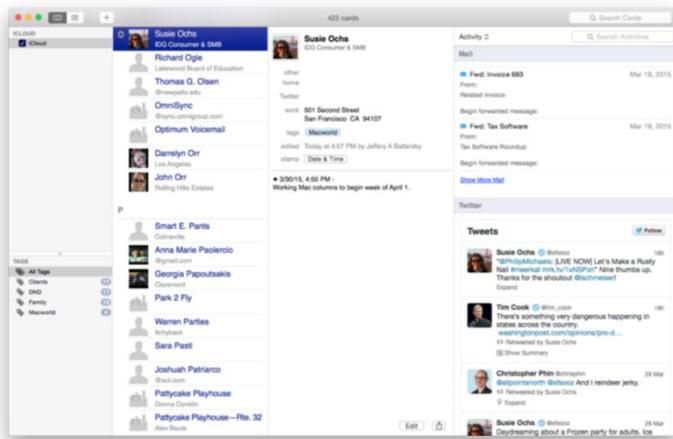
going to have to commit to using BusyMac's BusyCal calendar app—BusyContacts offers no direct integration with Apple's Calendar app or any third-party calendar applications. It's a curious shortcoming, and one that may make it a deal killer for those simply looking for a good, basic CRM tool. (BusyCal is \$50, and a bundle of BusyCal and BusyContacts is available for \$80.)

THE SETUP

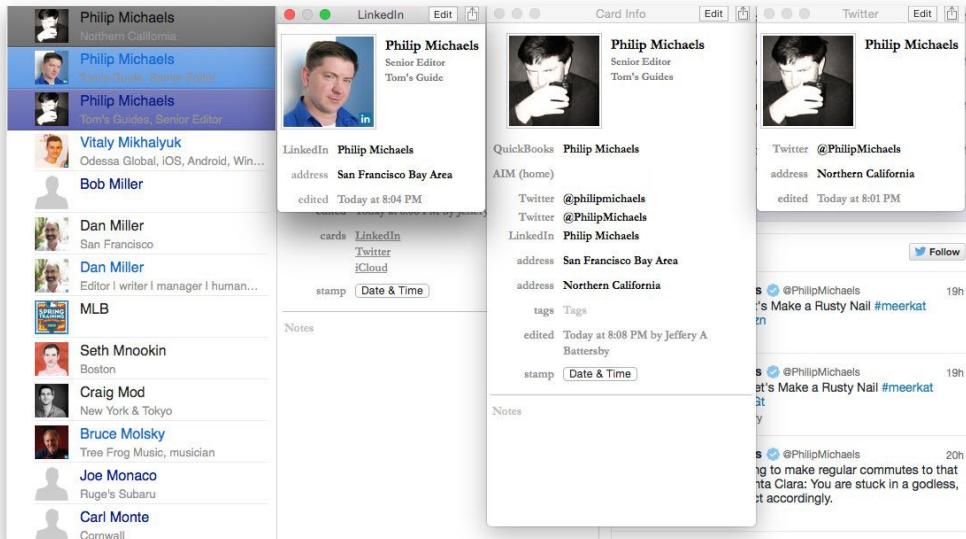
Getting started with BusyContacts is a snap. Open the app, and you're walked through a multistep process that gives BusyContacts access to your contacts. If you're using Apple's two-factor authentication for your iCloud data, you may need to create and use an app-specific password for BusyContacts to gain access to your personal information.

For BusyContacts to pull information from your contact's social media feeds, you may need to have related accounts set up in the application's Accounts preference. I say *may* because BusyContacts will pull someone's Twitter feed without requiring that you have your Twitter account set up, but it cannot pull Facebook information, even if you have your contact's Facebook account information, without your having set an account up. This makes sense, because for most Facebook feeds you can't see information unless you're logged in.

Adding social media has the effect of importing all contacts from each



BUSYCONTACTS CAPTURES
and centralizes email and event information for all your contacts.



of your sources into BusyContacts. The upside of this option is that you can see all your contacts and their related social media feeds in one place. If you have the same contacts in each source, the application lets you link them within BusyContacts, but in order to avoid displaying duplicate contacts you also need to “combine” the linked cards to change the way you see them. This merge doesn’t actually combine the contacts into a single record, it just changes the way contact information is displayed. This isn’t difficult to do, but can be a mite confusing if you don’t take the time to go through the documentation.

Oddly, even though I have a Twitter account set up on my Mac and I follow most of my contacts, BusyContacts’ built-in Twitter feed always displays a Follow button, even for contacts I already follow.

THE WORKFLOW

As soon as you step through the initial setup process, BusyContacts’ usefulness is evident. Select a contact and you’ll see your most recent email conversations right alongside your selected contact. Double-click a mail message and the Mail app will open that message. If you have BusyCal installed, a list of future and recent events will appear above the list of related email messages. Scroll down past the mail list and you’ll see

UNTIL YOU figure out how to combine linked cards, BusyContacts displays all your contacts from every address book you link to.

items the contact has posted on social media.

The beauty of BusyContacts is that it's effortless. Beyond the initial setup there is nothing you have to do to corral the information. If an email message is sent to a group of people, that message will be linked to each of those contacts and every email message, Messages conversation, and social media feed is searchable within BusyContacts.

One of BusyContacts' best features is its ability to link contacts with events created in BusyCal. This works two ways. You can create a new event from within BusyContacts, which opens BusyCal, creates a new event, and adds the contact to BusyCal's contacts field, or you can create a new event and manually add associated contacts to BusyCal's contacts field. In both instances you will see the event when you select that contact in BusyContacts, and it's quite easy to add or remove contacts for an existing event.

While I love the way BusyContacts links related information for selected contacts, I did find the way you create events, create notes, or otherwise initiate contact to be a bit uneven. The application offers several ways to initiate these events, but those options aren't always where you expect to find them. For example, BusyContacts lets you use an Action menu and a contextual menu to perform contact-related tasks. But you can't use a contextual menu when clicking on a contact to start a FaceTime call. Instead you have to use the action menu or Control-click the contact's phone number to initiate a call. Likewise, you can't use the Action menu to add a tag to a contact. In short, it seems that the Action menu could have been eliminated altogether and the same tasks could have been performed using a contextual menu. The separation of tasks between these menus seems unnecessary.

ONE OF BUSYCONTACTS' BEST FEATURES IS ITS ABILITY TO LINK CONTACTS WITH EVENTS CREATED IN BUSYCAL.

BOTTOM LINE

As a first iteration contact-management app, BusyContacts has much to offer. Easy setup and centralization of every tidbit of your contact information, including email and social media feeds, makes it effortless to keep an eye on everything your contacts are up to. But, while BusyCal integration is a huge benefit, it's also a limitation if you're happy with your current calendar app. In addition, some minor interface quirks, while not deal killers, make BusyContacts unnecessarily inconsistent. ■



HARDWARE

13-INCH RETINA MACBOOK PRO: THE FORCE IS WITH APPLE'S WORKHORSE LAPTOP

BY ROMAN LOYOLA

FROM THE OUTSIDE, the new 13-inch MacBook Pro with Retina display looks like the MacBook Pro we've come to know from the recent past. The major changes to the laptop are only apparent once you start using the machine: increased speed, and a new Force Touch trackpad that provides new input functionality.

The changes are most certainly welcome, but overall, they may not be enough for anyone who bought a 13-inch Retina MacBook Pro within the past three years to upgrade. But if your laptop is older, or you're thinking about upgrading from a MacBook Air, you'll see great benefits.

13-INCH RETINA MACBOOK PRO



AT A GLANCE:

If you have an older non-Retina Mac laptop, it's a good time to upgrade. Obviously, you'll see a huge performance boost. But you'll also be wowed by the Retina display, and the Force Touch trackpad is cool.

PRICE:

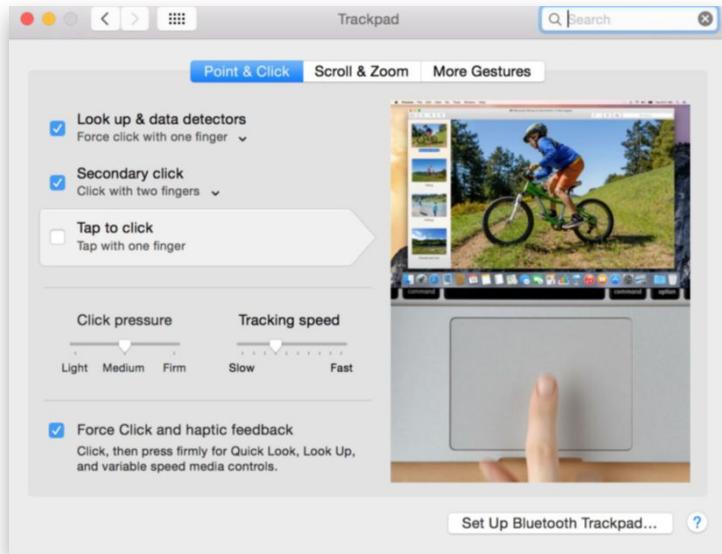
13-inch Retina MacBook Pro/2.7GHz 128GB flash storage: \$1,299

13-inch Retina MacBook Pro/2.9GHz 256GB flash storage: \$1,499

13-inch Retina MacBook Pro/2.9GHz: \$1,799

COMPANY:

apple.com



YOU CAN ADJUST the amount of pressure needed to perform a click in *System Preferences* → *Trackpad*.

THE NEW FORCE TOUCH TRACKPAD

When you press it, the 13-inch Retina MacBook Pro's Force Touch trackpad feels like it clicks, but the click you actually feel is haptic—technology is used to create a sensation of clicking. For longtime MacBook users, you can notice a difference when the new 13-inch Retina MacBook Pro is off: You can still click a trackpad on an older MacBook that's powered off, but tap on the Force Touch trackpad and it feels dead, like you're pressing against the laptop case itself.

The Force Touch trackpad has sensors to detect how hard you're pressing. You can press to click like you normally would, but you can also perform a Force Click by pressing a little harder; you'll feel a second, more pronounced click. Force Click has different functions; it can be used for Quick Look in the Finder; Force Click on a date and a pop-up appears to add an event to Calendar; it can activate Look Up; it shows a preview when you Force Click a web link; and much more.

I've always used the trackpad as a last resort. I prefer a mouse because my fingers fumble when I have to do things like clicking and dragging to select part of an image or a section of text. But Force Click has me using the trackpad more often because it's so useful. I don't see myself ditching the mouse soon, but I could be using it less and less.

WHAT ELSE IS NEW WITH THE 13-INCH MACBOOK PRO WITH RETINA DISPLAY

The other updates are inside the laptop. Apple replaced the Intel Haswell processors in the 13-inch Retina MacBook Pro with new Broadwell processors.

The \$1,299 laptop has a dual-core 2.7GHz Core i5 processor, with Turbo Boost (go.macworld.com/tboost) support up to 3.1GHz, 3MB of shared L3 cache (go.macworld.com/wisegeek), and 128GB of flash storage. The \$1,499 model has the same processor as the \$1,299 version, but it has 256GB of flash storage. The \$1,799 model has a 2.9GHz Core i5 processor with Turbo Boost support up to 3.3GHz, and 512GB of flash storage.

(On a side note, Apple updated the 15-inch Retina MacBook Pro during this review process. We'll have a review of those laptops coming soon.)

Along with the processor upgrade comes a graphics upgrade. The new Intel Iris Graphics 6100 is still an integrated graphics processor, but Apple says it's 40 percent faster than the Iris Graphics 5100 integrated graphics in the previous Retina MacBook Pro. Apple also says the flash storage is up to two times faster than before.

Last but not least, Apple says that it has improved the battery life of the 13-inch Retina MacBook Pro, touting ten hours of "wireless web" use and 12 hours of iTunes movie playback. The previous model was rated at 9 hours for both use cases. (Battery life is addressed in this month's feature on page 80.)

PERFORMANCE

As expected, the performance difference between the new 2.7GHz and the 2.9GHz Retina MacBook Pro is marginal, with the 2.9GHz laptop about 5 percent faster than the 2.7GHz laptop in Geekbench 3 (primatelabs.com/geekbench) tests. But remember, the price difference between these models doesn't just cover the processor upgrade; it also includes more flash storage capacity.

Even when compared to last year's 13-inch Retina MacBook Pro, the new models are only 7 percent faster than the older laptops they respectively replace. In order to see gains over 10 percent, you have to compare the new laptop to models released in 2013.

The graphics improvement is much more impressive: The new 13-inch



THE NEW 13-inch Retina MacBook Pro has the Force Touch trackpad. The keyboard hasn't changed, however.

Retina MacBook Pro had a 29 percent increase over last year's models in the Cinebench OpenGL tests. It's not the 40 percent that Apple touts, but Apple's testing was done with a different benchmark that includes three video games.

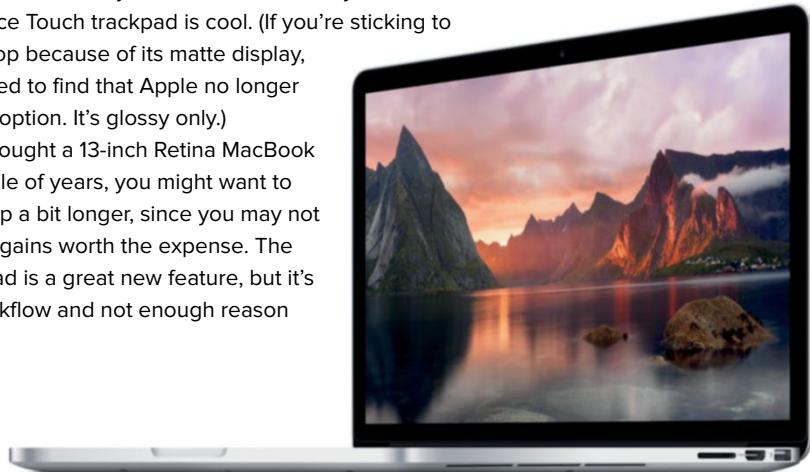
In the Black Magic Disk Speed Test, the 13-inch Retina MacBook Pro posted an average write speed of 1156.1 MBps and an average read speed of 1299.9 MBps.

The performance charts for Geekbench and Cinebench are posted here (go.macworld.com/retina13mbpchart). The charts include data points from the MacBook, MacBook Air, and recent Retina MacBook Pros for your reference.

BOTTOM LINE

I've always been a fan of the MacBook Pro with Retina display. Though my personal preference is for the 15-inch model, the 13-inch models I tested are attractive laptops in their own right. If you have an older non-Retina Mac laptop, it's a good time to upgrade. Obviously, you'll see a huge performance boost. But you'll also be wowed by the Retina display, and the Force Touch trackpad is cool. (If you're sticking to your older Mac laptop because of its matte display, you'll be disappointed to find that Apple no longer has a matte display option. It's glossy only.)

However, if you bought a 13-inch Retina MacBook Pro in the past couple of years, you might want to stick with your laptop a bit longer, since you may not consider the speed gains worth the expense. The Force Touch trackpad is a great new feature, but it's not vital to your workflow and not enough reason alone to upgrade. ■





HARDWARE

13-INCH MACBOOK AIR: NICELY BLENDS PERFORMANCE AND PORTABILITY

BY ROMAN LOYOLA

NOW THAT THERE'S a new ultraportable laptop in town in the form of the 12-inch MacBook, what's the deal with the MacBook Air? It's still an active part of Apple's lineup, and in case you missed it, was updated on the day the 12-inch MacBook was announced.

The 13-inch MacBook Air changes are relatively minor, but its standing in Apple's lineup is what changed the most. While the MacBook Air is still an ultraportable laptop, there's a newfound emphasis on its value—the four recently refreshed models make up the affordable end of Apple's laptop lineup.

13-INCH MACBOOK AIR



AT A GLANCE:

The MacBook Air marches on as a solid, lightweight laptop with enough performance for a large number of users to serve both on the road and on an office desk.

PRICE:

13-inch MacBook Air 128GB flash storage: \$999

13-inch MacBook Air 256GB flash storage: \$1,199

COMPANY:

apple.com

WHAT'S NEW WITH THE 13-INCH MACBOOK AIR

The major update to the MacBook Air is a straightforward CPU and graphics upgrade. Both the 11-inch and 13-inch models sport a dual-core 1.6GHz Core i5 Broadwell processor that supports Turbo Boost up to 2.7GHz and 3MB of shared L3 cache. This replaces a dual-core 1.4GHz Core i5 Haswell processor in last year's model. The new graphics is an integrated Intel HD Graphics 6000 chip, which replaces the Intel HD Graphics 5000.

The Thunderbolt implementation has been upgraded to Thunderbolt 2. And the 13-inch MacBook Air also has faster flash storage—Apple says it's two times faster than before.

That's about it for the upgrades. There's no Retina display; it's the same display found in previous models. The trackpad isn't a Force Touch trackpad; it's the old Multi-Touch model with which you're probably familiar. Compared to the Force Touch trackpad, the MacBook Air's Multi-Touch trackpad is much louder when you press to click, and the clicking feeling is much more pronounced. The keyboard is the same, it's not the new butterfly keyboard in the MacBook. (For me, that's a good thing. I'm not a fan of the MacBook's keyboard.) And there's still the standard 4GB of memory, though you can upgrade to 8GB for an additional \$100.

PERFORMANCE

The speed boost over last year's 1.4GHz Core i5 Haswell MacBook Air is modest. In Geekbench 3 (primatelabs.com/geekbench) tests, the new 1.6GHz Core i5 Broadwell 13-inch MacBook Pro was 10 percent faster in multi-core tests, and about 8 percent faster in single-core tests.



APPLE DIDN'T change the keyboard in the MacBook Air. And the trackpad is still a Multi-Touch trackpad, not the Force Touch one found in the MacBook and MacBook Pro.



THE 13-INCH MacBook Air weighs only 3 pounds, and is 10 to 15 percent faster than earlier models.

The improvement is, of course, much more noticeable when you compare the new MacBook Air to the 2014 and 2013 models—the speeds are 10 to 15 percent faster.

Compared to the new 1.1GHz MacBook, the MacBook Air has a distinct performance advantage. The MacBook Air was 28 percent faster in multi-core tests, and 22 percent faster in single-core tests.

When it comes to graphics performance, the new MacBook Air takes a big leap over the new MacBook and last year's MacBook Air in the Cinebench OpenGL (go.macworld.com/cbench) test, posting a 29 percent improvement on both computers. The new MacBook Air still lags behind the new 13-inch Retina MacBook Pro, but not by much: about four frames per second.

To gauge the speed of the 13-inch MacBook Air's new flash storage implementation, I used Blackmagic's Disk Speed test (go.macworld.com/dspeed). The 2014 MacBook Air with 256GB of flash storage had average write speeds of 520 MBps and average read speeds of 676 MBps. The new MacBook Air was impressive, posting a write average of 619.7 MBps and a read average of 1318.4 MBps.

To see Geekbench 3 and Cinebench performance charts, click here (go.macworld.com/mba13chart). The results also include older model Retina MacBook Pros for your reference.

A NEW PERSPECTIVE

When Apple first unveiled the MacBook Air in 2008, it made what was then considered severe compromises in order to achieve a small and lightweight form preferred by mobile users. But just when you think you

can't make a laptop even smaller and lighter—and make more compromises—Apple releases the MacBook.

Instead of thinking of the MacBook Air primarily as an ultraportable laptop, perhaps the MacBook Air is better defined first as the lower pricing tier of Apple's laptop line. The 11-inch models are \$899 and \$1,099, and the 13-inch models are \$999 and \$1,199. They're priced below all the other laptops, except for the \$1,099 non-Retina MacBook Pro. They don't have the same number of features as the MacBook Pro—no Force Touch trackpad, no Retina display, 4GB RAM, and so forth—but that's expected on less expensive models.

The MacBook Air is still worth your consideration as an ultraportable laptop: It weighs less than three pounds and is very thin. Carrying it is still a lot easier than carrying a MacBook Pro. But there's now the MacBook for users who think even the MacBook Air is too big and heavy, and that device connectivity and speed can be sacrificed to make an even lighter laptop. For those people, the MacBook is for them.

That all under consideration, something has to be said specifically about the MacBook Air's display. My everyday work computer is a 15-inch Retina MacBook Pro (lucky, I know), and because I stare at a Retina screen every day, switching to a standard display feels like a noticeable step down in image quality. It's not that the standard display is that bad, it's just that the Retina display is that good.

IT'S NOT THAT THE STANDARD DISPLAY IS THAT BAD, IT'S THAT THE RETINA DISPLAY IS THAT GOOD



BOTTOM LINE

The MacBook Air marches on as a solid, lightweight laptop with enough performance for a large number of users to serve both on the road and on an office desk. They might suffer from a case of feature envy, but more features would surely result in higher prices. If you can, consider getting a MacBook Air with 256GB of flash storage, unless you're OK with heavily relying on cloud storage. ■

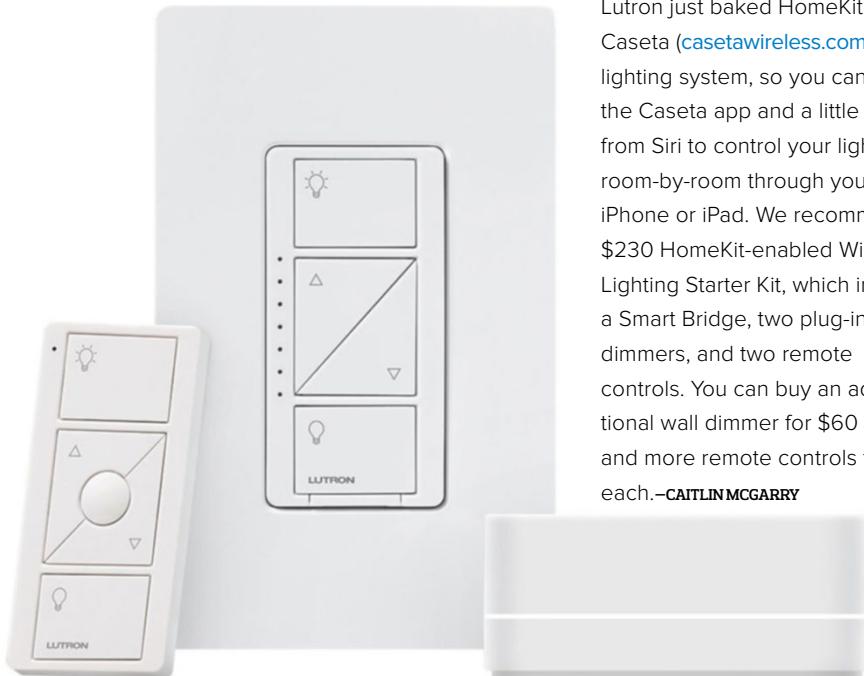
Hot Stuff

What We're
Raving About
This Month



GOPRO HERO+ LCD

GoPro's latest is the \$300 Hero+ LCD (gopro.com), featuring built-in Wi-Fi and Bluetooth support that let you connect the camera to a corresponding app on your iPhone or iPad. From there, you can take a look at shot previews, have total camera control, and then share your footage to Instagram, Facebook, Twitter, or more. But we understand you're only allowed to purchase it for surfing, skydiving, or skydiving into the surf. —**JOEL MATHIS**



LUTRON CASETA

Lutron just baked HomeKit into its Caseta (casetawireless.com) lighting system, so you can use the Caseta app and a little help from Siri to control your lights room-by-room through your iPhone or iPad. We recommend its \$230 HomeKit-enabled Wireless Lighting Starter Kit, which includes a Smart Bridge, two plug-in dimmers, and two remote controls. You can buy an additional wall dimmer for \$60 each, and more remote controls for \$15 each.—CAITLIN MCGARRY

Hot Stuff

What We're
Raving About
This Month



CALDIGIT THUNDERBOLT STATION 2

At \$235 with a 1-meter Thunderbolt cable (\$200; caldigit.com), the CalDigit Thunderbolt Station 2 is a pretty good deal. It sports a handsome vertical standing “Titanium Grey” aluminum box with rubber feet to let you rest the dock on its side. More importantly, it features a pair of eSATA ports on the rear, alongside two Thunderbolt ports, two USB 3 ports, gigabit Ethernet, and HDMI. The front has a USB 3 port, a microphone jack, and a headphone jack. Added bonus: If you download CalDigit’s Thunderbolt Station Utility, you’ll get a menu bar item on your Mac that allows you to eject any items that are connected to the dock and are on your Mac’s desktop. —ROMAN LOYOLA

NOVELS ROCK 'N' ROLL
STAND-UP COMEDY JAZZ
VIDEO GAMES MOVIES
COMIC BOOKS TALK RADIO

EVERY NEW ART FORM HAS ITS **FIGHT FOR FREE SPEECH.**

OUR TIME IS NOW
FIGHT FOR YOUR VIDEO GAMES



VIDEOGAMEVOTERS.ORG



6 headaches Apple is fixing in iOS 9

It's the little things that drive you crazy every day: the shift key, the light-up notifications. Apple has heard the cussing and will fix these problems and more with iOS 9.

BY JARED NEWMAN

A

pple's iOS 9 has plenty of major features to look forward to, such as a more intelligent Siri, transit maps, and, and side-by-side iPad apps. Just as important, however, are the little things—the minor headaches of previous iOS versions that Apple is now getting around to alleviating.

To recap, here are six iPhone and iPad annoyances that will disappear in iOS 9:

1. A LESS-CONFUSING SHIFT KEY

Pop quiz: On the default iOS keyboard, are the letters uppercase when the shift key is gray, or white? Unless you bother to memorize, this issue has likely been a constant source of confusion since iOS 7. (The answer, by the way, is white.) As 9to5Mac notes, hitting shift in iOS 9 will toggle the letters on the keyboard between uppercase and lowercase, so there's no ambiguity about what you're about to type.

2. A MUCH SMALLER OS UPDATE

With iOS 8, updating from an older device required a whopping 4.6 GB of free storage space. This was a huge barrier for people who wanted the latest software, and likely contributed to slower-than-usual adoption.

Apple says iOS 9 will only require 1.3 GB by comparison, so even 16GB iPhone and iPad users will have an easier time upgrading.

3. ROTATION LOCK FOR THE iPhone MUTE SWITCH

The iPhone might not have needed a dedicated rotation lock switch when screens were smaller. But the iPhone



6 and iPhone 6 Plus can practically act as miniature iPads, so you might want to quickly enable landscape mode for videos and pictures before switching back to portrait-only. MacRumors notes that iOS 9 will have an option to repurpose the iPhone's mute switch for rotation lock, just like you can on the iPad.

4. A SEARCH FUNCTION FOR SETTINGS

As the iPhone has grown more sophisticated, its settings menu has become much more complex, with dozens of mazelike submenus. It probably won't get any simpler in iOS 9, but at least you'll be able to find specific settings with a dedicated search bar at the top of the app.

5. A WAY BACK TO SAFARI

We've all been in the situation where a website really wants you to install its iOS app, and you either end up in the App Store by accident or get maliciously redirected. As MacRumors points out, iOS 9 will add a "Back to" button when you hit an app link from Safari, so you can easily return to the browser.

JUST AS IMPORTANT, HOWEVER, ARE THE LITTLE THINGS—THE MINOR HEADACHES OF PREVIOUS iOS VERSIONS THAT APPLE IS NOW GETTING AROUND TO ALLEVIATING.

6. A PROPER APP FOR iCLOUD DRIVE

After resisting the idea of an iOS file manager for years, Apple took a step in that direction with iCloud Drive in iOS 8. But while this service provided a common storage directory for apps, it didn't have a centralized app of its own for users to manage their files. With iOS 9, users can expose a proper iCloud Drive app through system settings, bringing Apple's online storage solution in line with competitors such as Dropbox and Google Drive. ■

I was one of the **1** in **5**
Children in America who
STRUGGLE WITH HUNGER
join me and help put an
End to childhood hunger.

Viola Davis

**HUNGER IS
ALL OF US**

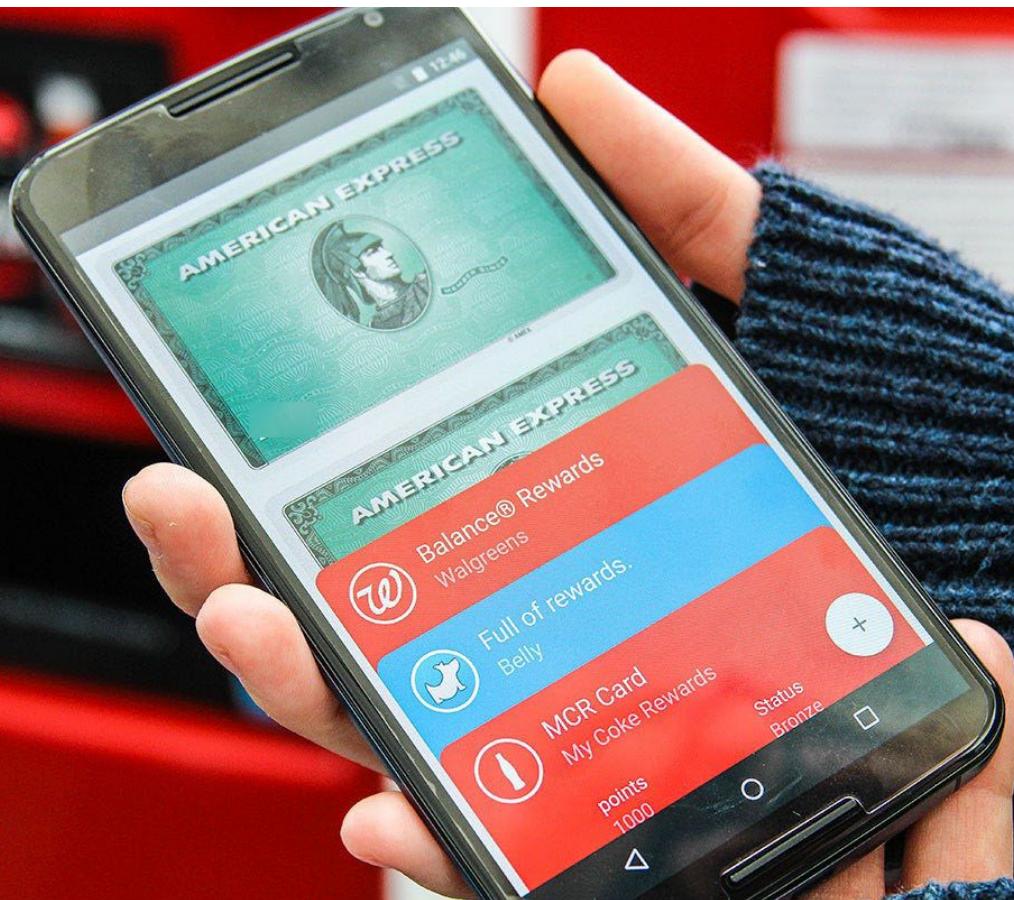


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The Hunger Is campaign is a collaboration between The Safeway Foundation and the Entertainment Industry Foundation to raise awareness and improve the health of hungry children.

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How Google took a page from Apple to secure Android Pay

Android Pay is incredibly similar to Apple Pay, and not just in name.

BY CAITLIN McGARRY

In case you missed it, Google launched a new mobile payment service at its annual I/O developers conference. It's called Android Pay (go.macworld.com/androidpay). But didn't Google already have a mobile payment service? Yes, yes, Google Wallet. That's not going away—in fact, it's getting a reboot as a peer-to-peer payment service—but Android Pay works a lot more like Apple Pay than Google's last attempt.

That's a good thing. Google Wallet required you to wake your phone, open the Wallet app, and enter a pin number if you decided to protect the app with a passcode, all before waving your phone near the payment terminal. That's a lot of work.

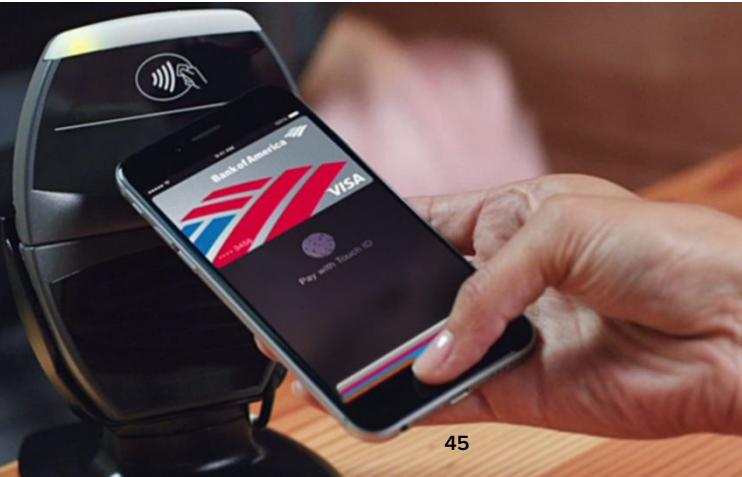
Android Pay will work just like Apple Pay: Upload your card information to the app, and Google will create one-time account numbers to represent your actual card number, so merchants never see your information. Then hold your Android

phone near a payment terminal and watch the screen come to life with your cards already stored inside. Tap the card you want to use, and authenticate your purchase with your fingerprint (a feature like Touch ID that's new to Android M, go.macworld.com/androidmfingerprint).

Sounds more than a little familiar.

**GOOGLE GETS SERIOUS
ABOUT SECURITY—SORT OF**
But Google was years ahead of Apple when it came to NFC pay-

APPLE PAY AND
Android Pay both rely on tokenization and fingerprint authentication to protect your purchases.



ments, you say? Well, yes, but it certainly didn't perfect them. First, Google lacked support from three of the four big carriers, which were backing their own mobile payment service called Softcard, which folded into Google. The company also found a rival in Visa, which was developing its own NFC payment option. And at last count just a few months ago, Google Wallet had support from just over 300,000 retail locations, a far cry from the 700,000-plus that are on board with Android Pay, plus the 1,000 apps that support Android Pay purchases.

Then there's the not-so-small issue of security, which Apple went to great lengths to perfect. Android Pay uses tokenization to create virtual representations of your real card numbers, just like Apple Pay. The big difference between the two services is that Apple uses a Secure Element, a physical chip inside your phone, to store your encrypted financial data. Android Pay, like Google Wallet before it, uses Host Card Emulation, storing your encrypted data in the cloud.

That can be off-putting. Google Wallet also stored all of your transaction information, including time, date, and geolocation, within the Wallet app. So helpful! And so creepy. Android Pay is now far more secure than its predecessor, thanks to

ANDROID PAY USES TOKENIZATION TO CREATE VIRTUAL REPRESENTATIONS OF YOUR REAL CARD NUMBERS, JUST LIKE APPLE PAY.

tokenization and fingerprint authentication, though it sounds like the service still stores information on what you bought and when—you'll be able to see "transaction details right on your phone," Google said in a blog post announcing the new service.

NO FINGERPRINT? NO PROBLEM

Google's biggest Android issue is fragmentation—the fact that not everyone can install the latest version of its OS at the same time—so it made Android Pay backward-compatible to devices running KitKat and up (two OS versions ago). But only the latest version of Android supports fingerprint authentication for purchases, and not all Android phones have fingerprint sensors. If a phone lacks a fingerprint sensor, or if the phone isn't on Android M, then Android Pay reverts to a passcode or pattern unlocking mechanism, losing the security inherent in fingerprint authentication to begin with—and basically making the new feature new in name only.

Apple has the advantage of being able to push out software upgrades instantly, which means every iPhone owner with compatible hardware (6, 6 Plus, or Apple Watch) could immediately start using Apple Pay on launch day. And while it would be great if Apple fans with older iPhones could use Apple Pay, too, the security features just aren't in place (unless you have an iPhone 5, 5s, or 5c and an Apple Watch). Don't have a fingerprint sensor in your iPhone? Sorry, no Apple Pay for you. Better safe than sorry.

But Google beefing up its mobile payment service to compete with Apple is good news, because it forces both companies to improve. For instance, Android Pay works with your rewards cards and loyalty programs, which Apple is reportedly planning to add to Apple Pay. Once retailers finally move to NFC payment terminals, paying for stuff with your phone instead of a physical card will at long last become the norm. ■



FINGERPRINT AUTHENTICATION IS KEY to Apple Pay—not so much for Android Pay.

VIDEO: The top 3 biggest reveals of WWDC 2015

BY JON PHILLIPS



VIDEO

To view this video,
go to [go](http://macworld.com/wwdc2015vid).
macworld.com/wwdc2015vid



In this video: Siri gets smarter. Apple Watch gets much more useful. And is Apple Music poised to kill other streaming music services by offering every feature imaginable?



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Video players

Just Recorded

View All

SOCIAL MEDIA

For real. This app is totally sketch.

HOME THEATER

Comcast makes its pi

platform update, 4K

Comcast unveiled two new technologies to them cords.

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Pad & Quill transforms a hunk of wood into an elegant Apple Watch stand

Inspired by a 100-year-old pocket watch stand, this Minnesota-based company created a home-grown charging stand for Apple's smartwatch.

BY JULIO OJEDA-ZAPATA

To design a charging stand for the timepiece of the future, Brian Holmes looked to the past. A few years ago, his grandmother gave him an old pocket watch that had once belonged to his long-deceased grandfather. He needed a way to show off the timepiece, and vaguely remembered seeing elegant, collapsible wooden stands made for this purpose.

Scouring the Internet, he found and snapped up a couple of these stands, both about a century old yet in decent condition. One of them turned out to be a reasonably good fit for his grandfather's pocket watch.

Holmes runs Pad & Quill (padandquill.com), a Minneapolis-based Apple accessory maker that is best known for iPhone and iPad cases consisting of wooden frames wrapped in fine book-like bindings. But the Apple Watch required a very different kind of accessory—and those pocket-watch stands became Holmes's inspiration.

The company now offers the Luxury Pocket Stand for Apple Watch, a compact wooden watch holder that folds shut for convenient transport—a feature that makes it unique among the torrent of Apple Watch stands coming on the market.

The \$70 Pocket Stand, carved out of American cherry, African mahogany, or American walnut, is made entirely in Minnesota.

Its pieces are carved from wood

planks with a CNC router, a sort of computer-controlled cutting machine, at a rural plant northwest of the Twin Cities. The pieces are transferred to Holmes's Minneapolis workshop for more sanding, final finishing with

HOLMES, LIKE OTHER APPLE-ACCESSORY MAKERS, IS TAKING A LEAP OF FAITH WHEN DESIGNING GEAR FOR SUCH A NEW DEVICE

furniture-grade oil, and assembly.

The result is an accessory with two hinged pieces, one serving as a base, and the other an angled platform for the Apple Watch. Cut-outs for the round charger and its cord essentially let you make those part of the stand.

Holmes said he could not release his stand until he had a watch and charger to put on it for final tweaking, including adjustments to the wooden grooves where the charger and its cord rest. But he said the stand was



much easier to design than an iPhone case, which requires more precise guesswork about an unleased handset's measurements.

That's not all Pad & Quill has in store for Apple Watch owners. Other Apple Watch gear includes a \$99 Timber Catchall, a wooden charging stand that has a larger base with compartments for your iPhone and keys; the \$50 Roll Up Kit, a trifold leather case; and for \$120, the Luxury Travel Kit combines the Luxury Pocket Stand with the Roll Up Kit. Also \$120, the Luxury Travel Pouch combines the stand and a cotton-lined leather pouch.

BETTING ON THE APPLE WATCH

Holmes, like other Apple-accessory

makers, is taking a leap of faith when designing gear for such a new device. Any such launch "is kind of fretful," Holmes acknowledged. "You design a product, you see what you think people would like to buy, but until you've announced it, you have no idea how well it will do."

He had doubts about the watch stand while it was being developed, for instance. "Maybe this is just stupid," he recalls thinking to himself.

But the orders have been rolling in. "We've seen enough sales that we feel this is worth the investment," Holmes said. "This looks like a product we will be able to keep selling for the rest of the year."

Pad & Quill finds itself in a fairly secure position because of a highly

THE LUXURY POCKET STAND with its inspiration... and Brian's grandfather's pocket watch.

diversified product line. Its Apple Watch line will initially be small potatoes compared with its gang-buster trade in cases for iPhones, iPads, and one version of Amazon's Kindle e-book reader. These are what made the company profitable just two years after its founding in 2010.

The iPhone and iPad cases, which look like elegant leather-bound books when they are closed, are also made in Minnesota. The frames are stamped out of wood sheets at the rural facility. The frames are then refined at Pad & Quill's Minneapolis workshop and then transferred to a St. Paul bookbinder, where they are sheathed in leather and lined with meticulously measured colored paper.

"I love design, and working with craftsmen," said Holmes, who runs his company with his wife, Kari. "When I have a rough idea for a



product, a vision, we sit down and banter about what is possible. It's a constant dance of creating something, and I'm constantly getting educated about how wood and leather and canvas work." ■



ZAGG FOLIO: iPAD AIR 2 KEYBOARD CASE CAN BOOST YOUR PRODUCTIVITY

BY JASON CIPRIANI

WIRELESS KEYBOARDS for the iPad come in all shapes and sizes. Some duplicate Apple's Smart Cover approach by only covering the screen when it's not in use. Others forgo attaching to the iPad, letting users decide which case to use. And some keyboards offer complete protection. Such is the case (forgive the pun) with the Zagg Folio (go.macworld.com/zaggfolio).

The Folio is available in black or white, complete with a faux-leather back to add an appealing flair to its otherwise mundane plastic housing.

IT'S A KEYBOARD, TOO

The keyboard itself is fairly standard as far as Bluetooth keyboards go.

ZAGG FOLIO FOR iPAD AIR 2



AT A GLANCE

All in all, the Folio is a quality keyboard-case combo for someone looking to keep their investment safe and add a productivity tool to the iPad.

PROS

- Protection is first and foremost
- Magnets turn wake or put the iPad into sleep when you open/close the case
- Keyboard layout is spacious
- Backlit keyboard is a plus for night typing

CONS

- The iPad makes the case top-heavy when you tap the screen
- Touch-typists will dislike the amount of travel in the keys
- Slight lag after turning it on while it connects to your iPad

PRICE

\$100

The top row of keys are iOS shortcuts, such as a lock key, the home button, media controls, and a Spotlight button. The rest of the keyboard follows the standard QWERTY layout, with keys that are ample in size.

Typically, when I switch between wireless keyboards (which is often) the first hour or two is riddled with typos from having to adjust to the size or layout of the keys. That didn't happen to me with the Folio. The keys are spaced just right and feel bigger than most keyboards I've tested. One complaint about the keys, however, is that they have almost too much play. They tower high above the plastic housing and can be pushed down until they're almost even with it. The extra depth slowed my typing speed ever so slightly. It's not a major complaint but something touch-typists will likely take issue with.

One thing I consistently noticed during my testing was the lag in-between turning on the keyboard and connecting with my iPad. On very few occasions did I experience the connection to be nearly instant as I normally experience with other keyboards. The majority of the time there was a two- to three-second delay between seeing the green power button light up and the connection being made with my iPad. I can only guess the issue lies with the Folio.

REMEMBER TO HOLD IT DOWN

The housing provides for an adjustable

THE KEYS ARE SPACED JUST RIGHT AND FEEL BIGGER THAN MOST KEYBOARDS I'VE TESTED.



**ZAGG FOLIO
FOR iPAD AIR 2**

135-degree viewing angle. Though when you have the viewing angle maxed out, the case becomes top-heavy. The result is a keyboard that's prone to falling off your desk or table when you tap on the iPad's screen. And that's with a normal touch of the screen to, say, tap on a back button.

I had to get into the habit of leaving one hand on the keyboard to hold it down with the other hand tapping or swiping my way through apps.

HOPE YOU LIKE LANDSCAPE

The biggest downside to the Folio is that you're locked into using the iPad in landscape orientation with a keyboard below it. You can remove your iPad from the case at anytime, but removing it and putting it back in defeats the main purpose of a Folio-like product: protection.

Besides, removing your iPad from the Folio isn't an easy feat—it takes a bit of work to do it (by design, no doubt).

BOTTOM LINE

Despite my gripes about connection lag or it being top heavy, I found the Folio to be a delight to use. The familiar spacing and layout of the keyboard cuts down on the learning curve, and I felt confident in the level of protection.

All in all, the Folio is a quality keyboard-case combo for someone looking to keep their investment safe and add a productivity tool to the iPad. Now, who can I talk to at Zagg about this "Warning" sticker just below the keys? It's annoying and I can't get it off. ■

ALL IN ALL, THE FOLIO IS A QUALITY KEYBOARD-CASE COMBO FOR SOMEONE LOOKING TO KEEP THEIR INVESTMENT SAFE AND ADD A PRODUCTIVITY TOOL TO THE iPAD.



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GLASS PLANNER: iPHONE APP HAS THE BASIC TOOLS FOR KEEPING YOUR SCHEDULE

BY JASON CIPRIANI

COUNTLESS APPS FILL the App Store, many promising to help keep you organized and on task by applying the same basic method, but with a slight twist.

Recently highlighted by Apple as a best new app in the iTunes Store, Glass Planner (go.macworld.com/glassplanner) is the latest entry into this already crowded space. Only the team behind Glass Planner are proud of the approach it takes when helping you get things done.

That approach is composed of three different parts.

GLASS PLANNER



AT A GLANCE

Glass Planner sets itself apart from the rest of the pack by compiling all of your calendar entries and tasks into one list, with one view.

PROS

- Intuitive, interactive interface
- iCloud integration

CONS:

- Tutorials are everywhere
- No dedicated iPad app
- Lacks natural-language input for new events

PRICE:

Free

PLAN, ACT, DONE

At the bottom of the app you'll find three different tabs, each representing a different step in the process of getting things done.

Naturally, the first step in using any task-management app is planning. The Plan tab will show you a broad view of your schedule, complete with a list and a calendar view.

Act is where you go when you want to view your immediate schedule, and mark tasks off as complete or reschedule appointments.

The Plan and Act tabs also allow you to create new calendar appointments, tasks, or calendar notes. The first two items are familiar to nearly

everyone, while the latter is simply a different name for an all-day calendar entry.

The Done tab is nothing more than a list of recently completed appointments and tasks.

Interactions within the app consist of dragging and dropping for rearranging tasks and swiping to reveal further actions. It's reminiscent of Clear (go.macworld.com/clear07), another task-management app, complete with fun sound effects.

I would like to see Glass Planner add a natural-language entry method, so that entering "remind me tomorrow at 4 to pick



up food" would result in a new task being created without any further interaction. Whereas entering "pick up food tomorrow at 4" would translate into a calendar entry.

As it is now, entering anything with a set due date and time requires a fair amount of tapping and selecting various details.

A SINGLE VIEW TO KEEP YOU MOTIVATED

Where the developers feel Glass Planner sets itself apart from the rest of the pack is that it compiles all of your calendar entries and tasks into one list, with one view. Instead of bouncing between a view of appointments in your calendar, and then another view for tasks.

I happen to rather like this approach. I have a hard enough time remembering to enter tasks in a to-do list, and the last thing I want to do is hunt and peck around multiple apps or screens to view entries.

In short, Glass Planner does a good job at presenting the information I need, when I need it.

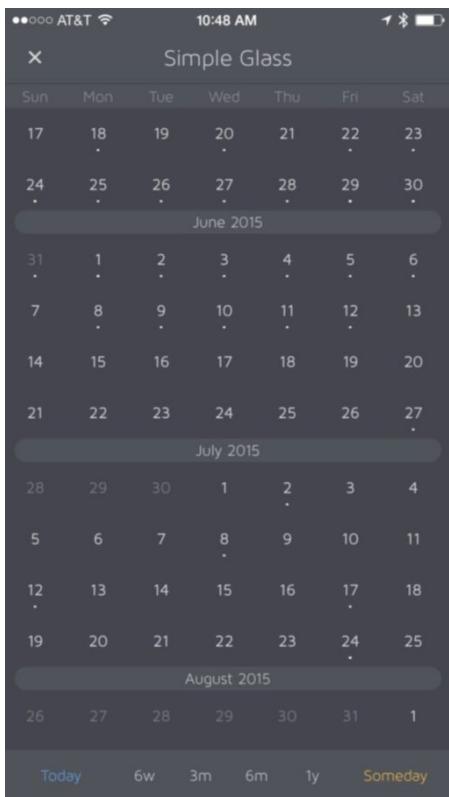
LACK OF iPad APP HURTS

When an app takes a different approach to a common action, as Glass Planner does with task management, it's imperative a user have access to the service across multiple devices.

Granted, the app creates an iCloud calendar of its own, making it possible to view content on your other Apple devices, but that calendar lacks Glass Planner's unique management tools, so it hurts the overall experience.

TOO MANY TUTORIALS

The first time I launched Glass Planner, I was greeted with a welcome video. This is fairly standard for apps, so I watched it and came away with a basic understanding of what to expect from the app.



Then as I began to tap my way through each screen, going from Plan to Act to Done, and back again, I was greeted with a pop-up tutorial. Tap on a button to create a calendar entry, yet another pop-up is presented. Want to create a task? You guessed it, another tutorial is presented.

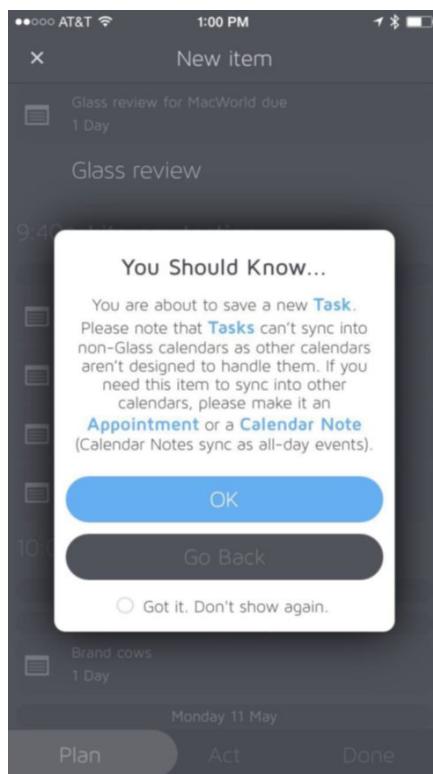
I understand wanting to help users learn an app, but hand-holding through every single screen isn't necessary. In fact, it's a quick way of scaring off users altogether.

BOTTOM LINE

Glass Planner has the basic foundation of a solid task-management app, but it's currently lacking features such as an iPad app counterpart (and going one step further, a Mac counterpart) and natural-language input to speed up the process of entering appointments and tasks.

The tutorials left me feeling that the app is harder to use than it actually is. When it comes down to it, there's nothing radical enough about Glass Planner to justify the prompts.

If you're someone who relies solely on your iPhone to stay on task, Glass Planner is worth a fair shot. But if you're someone who uses multiple devices for planning, you might want to hold off until the iPad app is released later this summer. ■





ULYSSES FOR iPAD 2.0: POWERFUL, FEATURE-FILLED TEXT EDITOR HAMPERED BY FILE SYNC

BY JASON CIPRIANI

LAST YEAR, I reviewed Ulysses III for OS X, explaining that it “is much more than just a Markdown editor [...] as it includes a good number of organizational features.” Since then, The Soulmen, the app’s developer, has updated the OS X app to version 2, and introduced an iPad app. The \$20 Ulysses for iPad (ulyssesapp.com) attempts to reproduce the OS X experience—interface and features—on an iPad, and does so quite well.

I prefer using apps that have both iOS and OS X versions: I find it makes my computing experience smoother if I shift between devices. If you feel that way, you know that the iOS version of your favorite app can’t be an exact copy of the OS X version, but you want it to be as close as possible. The Soulmen previously released an iPhone app called Daedalus Touch (daedalusapp.com), which offers some compat-

ULYSSES FOR iPAD



AT A GLANCE

Ulysses for iPad is a nearly complete writing app. Its file-sync features leave much to be desired, but if you use the Mac version, you’ll like the iPad version.

PROS

- Powerful Markdown editor
- Duplicates most of the features of the OS X version
- Includes excellent document management tools
- Multiple export formats

CONS:

- Syncing documents doesn’t work well outside of iCloud
- Doesn’t support Dropbox

PRICE:

\$20

ibility with Ulysses, but does so in a confusing manner. Ulysses for iPad, however, is nearly a mirror image of the OS X app, allowing you to smoothly switch from one to the other.

Like the OS X version, Ulysses for iPad displays Markdown syntax in what some people find a more user-friendly manner, coloring different types of text, and displaying links, images, and footnotes behind tokens. (You may like or dislike this, depending on how you are used to working

```
## "I will fight with him upon this theme, Until my eyelids will no
longer wag." Hamlet
```

I met with the doyen of Shakespeare scholars, Stanley Wells, to discuss this question. FN Professor Wells, together with Paul Edmondson, his collaborator at the Shakespeare Birthplace Trust, recently published a free ebook, called Shakespeare Bites Back FN, to counter these arguments. He was moved to do this for two main reasons:

"Because the conspiracy theorists are vocal and getting a lot of publicity, partly through the film *Anonymous*... \[and] because it's spread to the academy. There are two universities now – one in America, one in England – where you can do courses in authorship."

IMG

Anonymous (IMDB) tells the story of Edward de Vere, the 17th Earl of Oxford, one of some 77 candidates for Shakespeare's ghost writer. ("It's a bad film, very complicated, a silly



with Markdown.)

When I say you can switch smoothly, I only mean as far as the interface is concerned. Ulysses syncs your files via iCloud, and you can't just start writing on a Mac and switch to an iPad; you need to wait for iCloud to update your file. This isn't Handoff, where you can truly switch from one document to another across devices (assuming Handoff works with your hardware); this is iCloud's "Will it sync?" syncing, the kind that sometimes takes several minutes or more. Unfortunately, iCloud sync conflicts are common, and there is a complicated procedure to get the apps back in sync (ulyssesapp.com/faq/#icloud). I've lost data too many times with apps that use iCloud to be comfortable with trusting my files to it.

When your files do sync, you'll find that the iPad version of Ulysses is nearly exactly the same as the OS X version. This is no mean feat. Ulysses for iPad starts by reproducing your file organization; at least for files on iCloud (you can store files on your Mac with the OS X version and they won't show up on the iPad). You can create folders—what Ulysses calls Groups—that appear in both versions of the app and organize your files as you want. You may want to keep a library of files accessible, along with documents you're currently writing, and Ulysses lets you do that efficiently.

AS FAR AS ENTERTAINMENT CONCERNED, ULYSSES IS ONE OF THE MOST USEFUL AND ENJOYABLE EDITORS I'VE USED.

You can also access “external files” saved on iCloud Drive by other apps, or on Google Drive, Box, and others. But the process isn’t as smooth: you cannot create files from Ulysses for iPad on these cloud services, only open files already there. And the app’s biggest weakness is that it does not support Dropbox at all, even though the interface confusingly suggests that it does.

As far as entering text is concerned, Ulysses is one of the most efficient text editors I've used for iOS. It offers a useful button bar that gives you quick access to some basic Markdown tags and special characters. There's a counter button at the left of the ribbon, which expands to show words, characters, pages, and more (you can customize which counters to display). Ulysses for iPad also supports TextExpander snippets if you have that app installed. If you use a hardware keyboard with your iPad, you can also use a number of keyboard

AS FAR AS ENTERING TEXT IS CONCERNED, ULYSSES IS ONE OF THE MOST EFFICIENT TEXT EDITORS I'VE USED FOR iOS.

shortcuts to work more efficiently.

There are far too many features to cover in this review. Ulysses offers themes, tags, lets you make inline comments or notes, and you can share files or open them in other apps on your iPad. You can preview and export files in plain text, HTML, ePub, PDF, or RTF (though the built-in preview window doesn't update in real time; you need to refresh that window for changes to be displayed).

BOTTOM LINE

Ulysses for iPad is a mature app that you can use on its own as a powerful Markdown or text editor, and it provides a complete writing environment. It's even more powerful if you use Ulysses for OS X. The ability to sync files between the two platforms allows you to write anywhere and stay up-to-date—when iCloud works. I'd be a lot more positive about this app if it worked with Dropbox, and I would think that, given Dropbox's popularity, a lot of users would prefer storing files there than on iCloud. ■

**VIDEO**

To view this video, go to go.macworld.com/vocevid

VOYCE IS THE WELLNESS MONITOR FOR DOGS THAT MAKES WEARABLES VIVIDLY RELEVANT

BY JON PHILLIPS

EVEN IF YOU RETIRED YOUR FITBIT or Fuelband to a desk drawer long ago, you may still find room in your heart for another activity-tracking wearable. No, not for you—for your dog. The Voyce health and wellness monitor (go.macworld.com/voce) bypasses human biology entirely, and sets its sights on *Canis familiaris*, a species with much less capricious technology habits.

Yeah, it's another canine wearable. But instead of merely recording pawsteps, the Voyce band also tracks resting heart and respiratory

rates, two biometrics that can provide deep insights into a dog's health. My border collie mix, Whiskey, has been wearing Voyce for just over a month, and I've gathered a wealth of interesting data about just how much activity and sleep she's really getting—along with reports on her vital signs that would otherwise require specialized veterinary equipment.

Voyce just dropped its price from \$300 to \$200, but requires a pricey \$15 monthly or \$150 yearly membership plan. It's also limited to dogs with 12-inch necks or larger. It's also got an annoying, ever-blinking LED, and looks like cold, sterile medical equipment. And the Voyce data dashboard is web-only, and loads rather slowly.

The manufacturer, i4C Innovations, says it's working on fixing some of these issues, but even the 1.0 version of Voyce is supercool technology. The collar tracks Whiskey's heart rate and breathing when she's at home, kicking back on the couch—cool, calm and perfectly content. And this is the big innovation that should be of particular interest to veterinarians.

A MONTH'S WORTH OF DOGGIE DATA

The collar was originally slated to be available by summer 2014, but Voyce hit a snag with FCC approval. The device's special patented technology is a sensor that uses low-frequency radio waves to measure heart rate (tracking pulses of the carotid artery) and breathing rate (tracking muscle movement in doggie's chest). The FCC finally landed on a protocol for testing and certifying this application for dogs, and now the Voyce band is shipping.

Every day for the last month, I've been checking Whiskey's heart rate



THE VOYCE COLLAR quickly picks up scuffs, making an already industrial-looking band look a bit more janky.



HERE'S A MONTH of Whiskey's respiratory data. It would be nice if Voyce added days of the week to its calendar view.

and respiratory data, and her readings have been blissfully normal. I haven't seen any alarming heart rate spikes, and her breathing rates have varied between a relaxed 11 and 16 breaths per minute. The Voyce band takes these two readings when your dog is at full rest, and then reports a three-day rolling average.

This rolling-average approach smooths out the natural variability of canine heartbeat and breathing rates, presenting only baseline measurements that can show trends over time. But here's the really important thing, according to Voyce: Because the measurements are collected when your dog is perfectly calm, the readings will be much more instructive than anything measured during the cortisol-driven

VOYCE HEALTH AND WELLNESS MONITOR



AT A GLANCE

Stepping beyond simple activity and sleep tracking, Voyce records heart and breathing rates to build a comprehensive view of your dog's health over time.

PROS

- Provides extremely deep data on a dog's activity and rest.
- Shares heart and breathing rates—data that once required advanced equipment.
- Long battery life, easy to use.

CONS

- Not currently available for toy breeds. It's ugly and the LED is annoying.
- Membership fees are a tough pill to swallow.

PRICE:

\$200 plus \$15 monthly or \$150 yearly membership fees.

emotional duress of a veterinary visit.

To this end, the Voyce platform includes a Vet View that gathers up all relevant data and exports it to PDF. You can then send the file to your pet doctor to provide him or her with a deeper level of diagnostic insights. Voyce says its technology is greater than 90 percent accurate when compared to a Holter monitor (go.macworld.com/holter) or Televet (go.macworld.com/televet). These unwieldy veterinary devices measure a dog's heart rate at rest, but just aren't practical for continuous, everyday use.

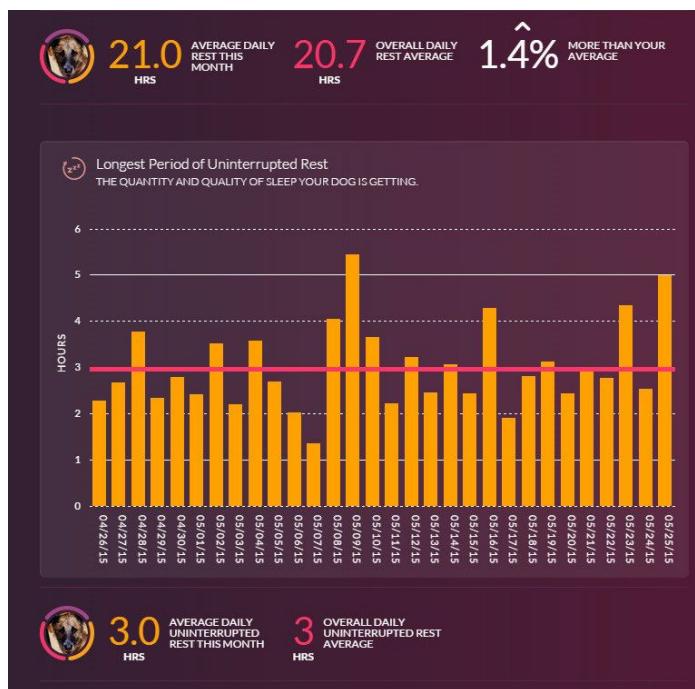
WHAT TREND DATA CAN REALLY TELL US

If you check your dog's Voyce data regularly, you may even be able to spot a developing medical problem. To this end, Voyce gives your dog a new voice in her own health and wellness effort.

For example, elevated heart rates can be an indication of pain, fever, or infection. Elevated respiratory rates might suggest a heart problem or an issue with your dog's endocrine system. The Voyce platform also reports your dog's longest periods of uninterrupted rest. So, if you notice these periods are getting shorter over time, your dog may be suffering from arthritis, hypothyroidism, or even cancer pain.

If you see sudden spikes or gradual upward swings in either metric, you shouldn't panic, but rather take the

PROGRESSIVELY SHORTER PERIODS of uninterrupted rest might indicate your dog is in pain.

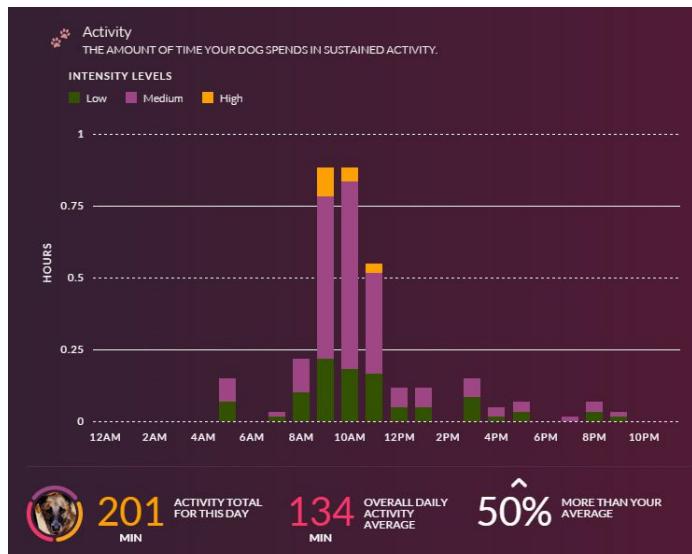


data to a vet who can triangulate heart and breathing rates with rest and activity data.

Amanda Landis-Hanna, i4C's Director of Veterinary Medicine, describes a scenario: "If I see that resting respiratory rate jump from, say, 12 to 25, I know there's something that I need to have a conversation about. If the resting heart rate normally hangs out around 60, and suddenly jumps up to 100, 110, 120—all of which are very elevated in a resting patient, but normal in a stressed-out patient in my hospital—that's important information."

The Voyce team doesn't want to turn pet parents into hypochondriacs, so the platform includes a library of professionally sourced articles on health, behavior, and nutrition, among other topics. There's also a symptom checker tool to help users identify specific problems.

"What we've found with the pet parents who are using Voyce is not that they're trying to diagnose their own dog, but that they feel much more in tune," says Landis-Hanna, who's been a practicing vet for 13 years. "They're tracking trends, they're reading the articles and better educating themselves, so that when they go into the vet office, they feel they're speaking the same language. And a



ON THE DAY WE shot Whiskey's Voyce video, she got 50 percent more than her normal daily activity. Here we see an hourly breakdown.



WHISKEY NEVER demonstrated any discomfort wearing the Voyce, but it looks a bit like a shock collar or a GPS tracker for parolees.

better educated client is generally more compliant, meaning if I can explain the benefit of blood work or X-rays, the pet parent will do those if they're able to, getting us closer to the diagnosis."

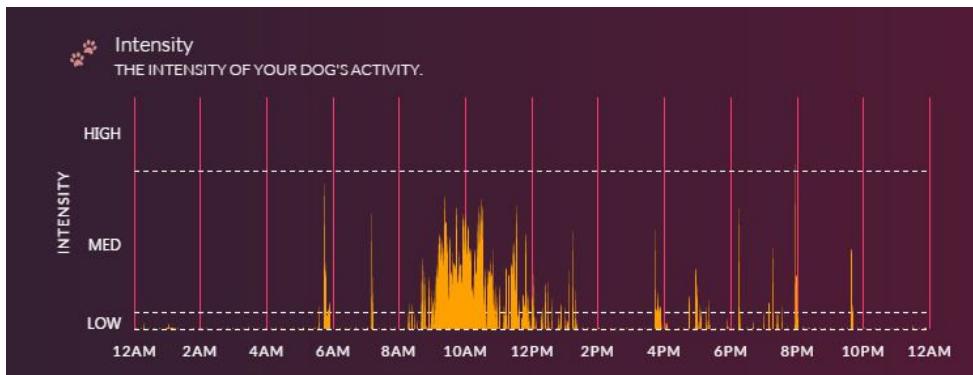
DEEP DIVES INTO ACTIVITY AND SLEEP

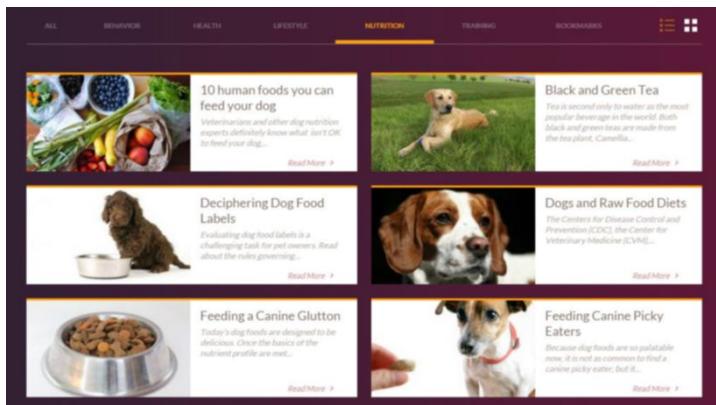
Throughout my testing, I sifted through Whiskey's data with interest, observing how much exercise she was getting at doggie daycare on weekdays versus time spent at dog parks on the weekends. The Voyce dashboard's activity data shows periods of low, medium, and high intensity levels, as well as estimates of miles covered, all based on accelerometer readings. It doesn't, however, show actual pawsteps. In other words, it's not Fitbit for dogs.

Nonetheless, it was interesting to observe that Whiskey's activity during really busy daycare visits exceeded her activity when I only gave her two 35-minute walks on a really lazy Sunday.

The dashboard doesn't report sleep like a human activity tracker would. Instead it reports rest, which combines actual sleep with simple sedentary activity like kicking back on the couch and waiting for the fun to begin. I was surprised to discover that Whiskey's average daily rest count is 21 hours a day. That exceeds the estimated 80 percent of combined sleep/rest time that's taken root as conventional wisdom, but Dr. Landis-Hanna confirmed that Voyce is showing most dogs aren't quite as active as experts have always believed.

THIS GRAPH CHARTS THE
intensity levels of Whiskey's activity on the day we shot her video. Clearly, the Voyce team likes its charts and graphs.





The screenshot shows the Voyce app's dashboard with a dark purple header. The header includes tabs for ALL, BEHAVIOR, HEALTH, LIFESTYLE, NUTRITION (which is highlighted in orange), TRAINING, and BOOKMARKS. There is also a grid icon in the top right corner. Below the header, there are six article cards arranged in a 3x2 grid. Each card has a small image, a title, a brief description, and a 'Read More' button.

- 10 human foods you can feed your dog**
"Even if your dog is a picky eater, your nutrition experts definitely know what isn't OK to feed your dog..." [Read More](#)
- Black and Green Tea**
"Tea is second only to water as the most popular beverage in the world. Both black and green teas are made from the tea plant, *Camellia*..." [Read More](#)
- Deciphering Dog Food Labels**
"Reading dog food labels is a challenging task for pet owners. Read about the rules governing..." [Read More](#)
- Dogs and Raw Food Diets**
"The Centers for Disease Control and Prevention (CDC), the Center for Veterinary Medicine (CVM)..." [Read More](#)
- Feeding a Canine Glutton**
"Today's dog foods are designed to be delicious. Once the basics of the nutrient profile are met..." [Read More](#)
- Feeding Canine Picky Eaters**
"Picky eaters are as predictable as the weather. While it's not as common as you might think, it is..." [Read More](#)

For what it's worth, I'm not worried that Whiskey is under-exercised. Looking at my Voyce dashboard, I can identify her most active days and correlate her numbers to nighttime behavior. On the days when Whiskey has even approached 20 percent activity time, she's been absolutely wiped out at night, suggesting she's passed her limit.

The dashboard also shows an estimate of calorie burn (helpful if you've identified a weight gain problem), and reports how many hours your dog has spent in direct sunlight. This last metric can prove especially useful if you're concerned your dog walker isn't doing his or her job.

Depending on the data set you're looking at, the dashboard can show you daily, weekly, monthly, and even yearly views. So, for example, when you're in the daily view, you can check to see the precise times when your dog was active and enjoying sunlight. The monthly view is available for all data sets, and is most helpful for spotting health trends. That said, I wish the dashboard mapped calendar dates to days of the week. This would make it much easier to compare weekday activity to the same metrics on the weekends.

A PORTAL FOR ALL YOUR DOG'S DETAILS

The Voyce dashboard is packed with features. In addition to tons of interesting articles (for example, "Can my dog handle group walks?" and "How to train a rock solid recall"), there's a goal-setting tool (for instance, lose 5 pounds over three months) as well as a function for setting reminders for vaccines, appointments, and routine care. You can also log

AMONG OTHER SERVICES,

your subscription fee pays for a growing collection of articles written by vets, behaviorists, nutrinists and other experts.

all of your dog's health and nutrition details, such as which shots are up to date, what she's allergic to, and exactly what kind of food she eats.

Your subscription fees cover all these features, and also pay for storing your dog's data on the Voyce servers. It's a robust platform, but it's worth noting that all popular human wellness wearables come with free monthly cloud service. As for the dashboard itself, it's easy to navigate on a desktop display, but it loads too slowly. I often found myself impatiently waiting for Voyce's servers to update Whiskey's charts.

Another gripe: There's no mobile app. Instead, the website employs a "responsive" design that automatically adjusts the user interface for smaller devices like tablets and smartphones. It sounds good in theory, but the render on smartphones is cramped and not intuitive. I also found the phone experience amplifies already annoyingly slow load times. On the upside, Voyce says it's working on a mobile app that will enable push notifications and other niceties we've come to expect from activity tracking apps.

NOT THE WEARABLE FOR DAINTY DOGS

As for the collar itself, well, let's just say it's not ready for Project Runway.



THE COLLAR LOCKS ON TO
your dog's neck with a burly, clacking fastener. It's not pretty, and the Voyce band doesn't currently support toy breeds.



IMAGINE THIS BRIGHT LED
entering your room in the
middle of the night while
you're sleeping.

I want Whiskey's coat to look lush and healthy, but I'm not interested in doggie fashion, so Voyce's cold, institutional aesthetic doesn't bother me (and I know it doesn't bother Whiskey). Still, its general look and feel evokes a shock collar—or possibly even a GPS monitor that you might see on a criminal under house arrest. It's not a glamorous look, and that might be a deal breaker if you named your dog Princess or Buttercup.

Battery life is rated for seven days, and I found this estimate to be accurate. The collar is waterproof down to one meter, so feel free to enter DockDog competitions. Data syncs with Voyce's servers over Wi-Fi every four hours or on-demand via a button press. You can add up to 10 Wi-Fi networks, allowing you to sync pretty much everywhere your dog regularly visits.

The Voyce collar currently comes in four sizes, supporting necks as scrawny as 12 inches and as burly as 32 inches. That's a wide range, but if you intend to buy Voyce for a toy breed, you'll have to wait for i4C Innovations to miniaturize the collar further. The company is targeting the Q4 2015/Q1 2016 time frame for that next step.

Ideally, the Voyce sensor is supposed to settle at the 6 o'clock position below a dog's neck. Whiskey's collar always seems to be pushed off to one side, but I've never seen any evidence of uncollected data. The

Voyce team says as long as the sensor housing is sitting between 3 and 9 o'clock, data collection should be fine.

As you can see from the photos in this article, the plastic collar picks up scuffs and dirt. Like the basic aesthetics, this doesn't bother me. However, I am bothered by the collar's bright, blinking green LED, which serves as a visual indicator to confirm the band is working. When Whiskey enters the bedroom in the middle of the night, the LED lights up the whole room—and that negatively affects my health and wellness.

Whiskey doesn't show any indication that she's annoyed by the LED or even wearing the collar in the first place, but clearly i4C knows the LED is a friction point for humans. The current LED has an auto-dimming feature for low-light situations, and the company says this will improve even further when Voyce moves to a new LED.

THE BAND WON'T FIT TOY BREEDS, BUT A SMALLER VERSION IS ON THE WAY.

CAN YOU PUT A PRICE ON A FAMILY MEMBER'S HEALTH?

With new pricing in June, i4C Innovations is dropping the cost of its Voyce hardware to \$200, but is increasing the price of its mandatory membership plans by 50 percent. Granted, \$150 a year is a low recurring cost for a platform with such promising health benefits. Because have you seen a vet bill lately? Still, I have to once again point out that Fitbit, Jawbone, Withings, and other human-activity tracker companies don't charge membership fees.

The collar isn't pretty, but that isn't a deal breaker. The platform doesn't have a mobile app, but one is coming. The band won't fit toy breeds, but a smaller version is on the way. And the blinking green LED is distracting, but i4C is working on a fix.

In sum total: Voyce suffers a number of version 1 problems, but the most serious ones are being addressed. "Casual" pet parents will bristle at the idea of paying membership fees, but "casual" pet parents probably shouldn't care for pets in the first place. Would I buy Voyce if total cost of ownership added up to \$1,000 a year? Probably not. Instead I would lean on my vet to spot trouble signs. But \$350 a year isn't an exorbitant price for all the interesting insights and diagnostic data that Voyce provides. ■

What's new at the App Store



PAPER

Everybody has loved Paper (fiftythree.com/paper) as an app that spurs and shows off your creativity, but now its developers are getting more work-minded. The newest features are grouped together under the label "Think Kit"—users can now create flow diagrams, org charts, axis lines, and wire-frames, create freeform color fills for trend lines and pie charts, and cut to rearrange shapes and create patterns.

Movie of the Day!



Like movies? Like bargains? Movie of the Day! (go.macworld.com/movieoftheday)

features a different movie from from the Fox archives each day, heavily discounted for download to your iTunes video library. All deals are available for 24 hours.

Fit Men Cook



We're suckers for self-improvement apps. The \$3 Fit Men Cook (fitmencook.com/)

iOS app offers more than 100 healthy recipes from health expert Kevin Curry, and a plan to do all your cooking two days a week, so you can have healthy food available to eat during the rest of your busy week.

Addapp



Addapp (addapp.io) takes the input from all your wearables—like Fitbit and Jawbone, along with a whole range of health-related apps—and converts the information into daily, personal insights about what you're doing to get healthy, and what you can do to improve. It's not just feedback—it's affirmation.—**JOEL MATHIS**

A Case with a Screen... in the Back!

This month's iPhone cases brings you fitness-forward options from Belkin and Griffin and extended battery life from Griffin, Mophie and PowerSkin.



POPSLATE

For those times when one screen just isn't enough, the PopSLATE (iPhone 6; \$129; popslate.com) is an Apple-certified case that comes with a dedicated secondary screen made from e-paper—the kind of display also used by Amazon's Kindle. The screen is powered by a rechargeable 240Ah battery that lasts about a week under normal usage and can be charged via USB. It connects to your iPhone via Bluetooth, and can be used to display your favorite images and text, or play a slideshow of your choosing.

AIRCHARGE

When charging cables become your worst enemy, the Aircharge (iPhone 6; \$40; air-charge.com) offers the convenience of wireless charging while protecting your iPhone 6 from drops and other hazards. The case features a protective bumper to help prevent damage around the iPhone's edges, and lets you recharge your iPhone 6 with any Qi-compatible charging dock by simply placing it on the charging pad. (Note that most wireless charging solutions aren't certified by Apple.)



iPhone Cases



MOPHIE

Mophie, you've delighted us again. The Juice Pack H2PRO (iPhone 6; \$130; mophie.com) doubles your iPhone 6's battery life, even when... you're underwater. The Juice Pack includes a powerful 2750-mAh battery, meets or exceed military test standards for shock and drops up to 1.2 meters, and can be completely submerged for about 30 minutes without any ill effects.

BELKIN

Slim and stylish, the Sport-Fit Plus Armband (iPhone 6 and 6 Plus; \$30 to \$35; belkin.com) comfortably wraps around your arm while housing your iPhone 6 during walks or runs. Made of stretchy neoprene, the armband offers full access to the iPhone's ports and buttons, includes room for your keys, cash, and other necessities, and lets you easily operate your touchscreen without interfering with any of its functions. Available in sidewalk/fuchsia, blacktop/limelight, or blacktop/overcast, the Sport-Fit comes with a complimentary six-month MapMyRun MVP membership to keep you on your fitness game.



GRiffin

We've got another running band for you: The Adidas Armband (iPhone 6; \$30; griffin.com), a nylon armband with a built-in key holder. Its pocket for the iPhone 6 has a clear window that is touchscreen compatible, so you can pause your running app or play a new song without having to take your iPhone out. It also has a port for your ear buds or a heart rate monitor. Its design prevents excessive moisture from building up, keeping you cool and comfortable during your run.



POWERSKIN

The Spare (iPhone 6; \$80; power-skin.com) incorporates a 2200-mAh battery to let you use your apps and chat all day long. MFI certified and NFC compatible, the case doesn't interfere with Apple Pay, and comes in space gray, silver, or gold editions that match the iPhone's original finish..



BATTERY LIFE TESTS: GO ALL DAY WITH APPLE'S MAC LAPTOPS

BY ROMAN LOYOLA

A big part of evaluating laptops is battery life. Since the tests take so long, our reviews of the new MacBook, 13-inch MacBook Air, and 13-inch Retina MacBook Pro appear without hard data for battery life (the MacBook review [go.macworld.com/snell] had Jason Snell's observations while working day to day). Battery life is one of the most common concerns readers have when Apple releases new laptops. It's an important data point; no one wants to be stuck with a dry battery, and Apple uses batteries that are not user-replaceable.



I ran two different battery tests on the new MacBook, 13-inch MacBook Air, and 13-inch Retina MacBook Pro. The first test I ran produced results that jibe with Apple's specification. The second test produced results that fell quite short, but there are a lot of factors that influence how long a battery can last.

In case you are interested, the three laptops had the following settings:

- Wi-Fi off for the iTunes movie playback test
- Notifications off
- In Energy Saver system preference (Battery Tab):
 - Turn display off after: Never
 - Put hard disks to sleep when possible: Checked
 - Slightly dim the display while on battery power: Unchecked
 - Enable Power Nap while on battery power: Unchecked
- Screen brightness set to 75 percent (starting at zero, press the screen brightness up button on the keyboard 12 times)
- Automatically adjust brightness off

BATTERY TEST: iTUNES MOVIE PLAYBACK

iTunes movie playback battery life results: 2015 Mac laptops

2.7GHZ 13" RETINA MACBOOK PRO
(EARLY 2015)

13:43

1.6GHZ 13" MACBOOK AIR
(EARLY 2015)

12:15

1.1GHZ 12" RETINA MACBOOK
(EARLY 2015)

9:18

MEASURED IN HOURS:MINUTES. LONGER BARS ARE BETTER.

BATTERY TEST: PEACEKEEPER WEB USE

Peacekeeper battery life results: 2015 Mac laptops

2.7GHZ 13" RETINA MACBOOK PRO
(EARLY 2015)

5:56

1.6GHZ 13" MACBOOK AIR
(EARLY 2015)

6:09

1.1GHZ 12" RETINA MACBOOK
(EARLY 2015)

4:24

MEASURED IN HOURS:MINUTES. LONGER BARS ARE BETTER.

The first test I ran was a looped playback of an HD video in iTunes. Apple's specs for iTunes movie playback are:

- 13-inch Retina MacBook Pro: Up to 12 hours
- 13-inch MacBook Air: Up to 12 hours
- MacBook: Up to 10 hours

The MacBook was the only laptop that didn't meet its specification, but it was only about 40 minutes short. Still, you're going to be able to watch several movies or maybe even a whole season of "Game of Thrones" on a trans-Pacific flight.

BATTERY TEST: PEACEKEEPER WEB USE

The second test I ran was the Peacekeeper Universal Browser Test (peacekeeper.futuremark.com), which has a battery-test component. I used this to test what Apple calls "wireless web" battery life. Apple's specs for wireless web are:

- 13-inch Retina MacBook Pro: Up to 10 hours
- 13-inch MacBook Air: Up to 12 hours
- MacBook: Up to 9 hours

The results for this test fell quite

short of Apple's specifications, but to be fair, this test is quite different from the one the company runs. Apple says its wireless web tests involve "browsing 25 popular websites," and the company doesn't get any more specific than that. Peacekeeper's primary purpose is to test web browser performance, so it has much more rigorous (peacekeeper.futuremark.com/faq.action) tasks that involve rendering videos, 3D graphics, web-based games, and more. Peacekeeper just happens to let you run it on a loop so that it acts as a battery test.

In real life, I've used each laptop for work during the day, and I've never had to worry about battery life. I spend a large amount of my day on the web, with periods using productivity apps.

With a new laptop, you'll find that it has more than enough battery life to get you through a workday. Of course, your mileage may vary based

on what you do. If you're heavily into production and frequently need to perform processor-intensive tasks, your battery life will be affected.

BOTTOM LINE

Looking beyond the results and laptops here: Just how important are battery-life test results to you, the consumer? In recent history, I've consistently seen a new laptop battery exceed Apple's specification. Apple has also made great efforts to tell consumers that it believes battery life is important, so the company seems to be doing what it can to deliver long battery life. Apple's always going to make a laptop that can last a working day.

Keep in mind that as a battery ages, it doesn't last as long as it originally did. We won't stop looking at battery life, but perhaps the results from a new laptop battery aren't as important as the life you get from an older laptop battery. ■

HELP KEEP THESE KIDS IN PLAY.

175,000 KIDS WILL BE DIAGNOSED WITH CANCER THIS YEAR.

Children are our greatest hope for the future. Let's be their greatest hope too.

Cancer strikes infants and children. For teens and young adults, survival can depend on treatment by a pediatric oncologist, designed specifically for them.

The St. Baldrick's Foundation and Stand Up To Cancer are funding groundbreaking collaborative research to bring the most effective therapies to kids fighting cancer. To learn how you can help keep these kids in play, go to stbaldricks.org/inplay and standup2cancer.org/pediatrics.

Julia Hernandez
Diagnosed at 16,
in remission.

Samuel L. Jackson
Stand Up To Cancer and
St. Baldrick's Ambassador

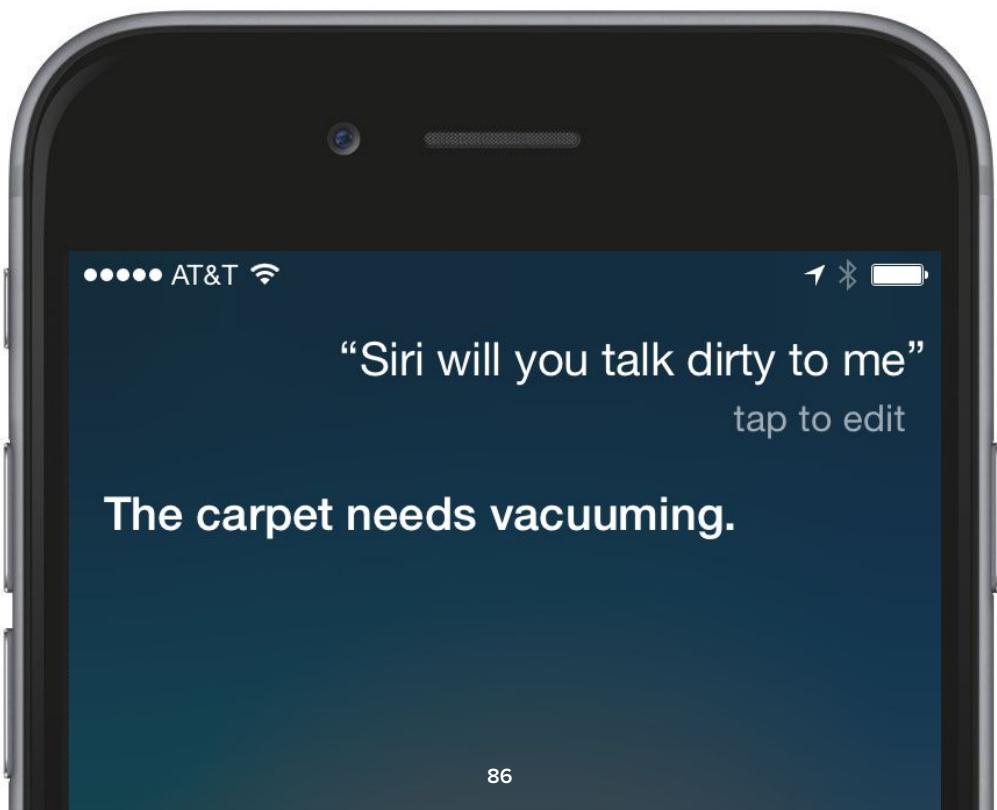


**St. Baldrick's
FOUNDATION**
Conquer Childhood Cancers

**STAND
UP TO
CANCER**

Siri says the darnedest things: 50 questions for Apple's virtual assistant

BY J.R. BOOKWALTER



“What does Siri mean”
tap to edit

‘Siri’ has many subtle, metaphorical, and frankly contradictory meanings. None of which I am at liberty to discuss. Sorry about that.



ver since Apple debuted Siri as a virtual assistant with the release of iOS 5 and the iPhone 4S, folks have been asking her all manner of questions, serious and frivolous, in an effort to test just how smart Cupertino's artificial intelligence technology really is.

ONE OF THE MORE NOTORIOUS EXAMPLES was made public last year during the murder trial of a 20-year-old Florida man who reportedly told Siri, “I need to hide my roommate” and in return was given a list of potential places to get rid of a body, such as swamps, reservoirs, metal foundries, and dumps. (The same inquiry now returns the cheeky response, “I used to be able to answer this question.”)

I decided to sit down and put Siri through a battery of our own questions, ranging from casual inquiries to lighthearted probes to see what kind of responses she'd come up with. While many of the replies weren't particularly noteworthy, it's clear this gal has only grown sassier over time.

GETTING TO KNOW YOU

Before rushing right into barking commands, I decided to get to know Siri a little better first.

Q: How old are you?

A: I'm old enough to be your assistant.

Q: What is your favorite color?

A: My favorite color is... well, I don't know how to say it in your language. It's sort of greenish, but with more dimensions.

'Siri' has many subtle, metaphorical, and frankly contradictory meanings. None of which I am at liberty to discuss. Sorry about that.

Q: What are you made of?

A: Something close to pure thought.

Q: Do you own a pet?

A: I thought about getting a Tribble. Several, actually.

Q: Do you like your job?

A: I have the best job in the universe.



And perhaps the most telling retort of the bunch, given that I made this query on Friday, April 10—the same day preorders for a certain new Apple product kicked off online:

Q: What are you doing after work today?

A: I'm eagerly awaiting the arrival of Apple Watch.

Following that self-serving reply, I switched tactics and decided to test a somewhat more amorous approach. Unfortunately, Siri was definitely not in the mood for love:

Q: Do you have a boyfriend?

A: It's just you and me.

Q: What are you wearing right now?

A: I can't answer that. But it doesn't come off.

Q: Siri, will you talk dirty to me?

A: The carpet needs vacuuming.

Q: Do you love me?

A: Let's just say... you have my utmost admiration.

Not quite the unbridled passion one would hope for, but there's only so far this relationship could go anyway...

ON TECHNOLOGY

With the ice appropriately broken, I moved on to more practical matters, such as Siri's views on Apple and its competitors.

Q: Guess what?

A: Don't tell me... you just got a new virtual assistant, right?

Q: What's the best computer?

A: The Mac! If it wasn't for the Mac, I wouldn't be here.

Q: Why is the Apple Watch already sold out?

A: Interesting question.

Q: When will I receive my Apple Watch?

A: When, indeed?

For the record, our early AM online preorder shows a delivery date sometime between April 24 and May 8. (Shame on you for not knowing that, Siri.)

We pressed on with a few more Apple-centric questions, but she wasn't in the mood to play salesperson—or tech support representative, for that matter:

Q: Should I buy a subscription to Beats Music?

A: I'm sure I don't know.

Q: Do you receive employee discounts on Apple products?

A: This is about you, not me.

Q: Should I buy a Mac or Windows computer?

A: It's your opinion that counts.

Q: Why does Bluetooth keep disconnecting my Magic Trackpad?

A: OK, I found this on the web...

Siri produced a similar web search when we inquired whether Microsoft was a friend or enemy to Apple, but she played coy responding to our next two questions:

Q: What do you think of Samsung?

A: I really couldn't say.

Q: Should I buy an Amazon Fire Phone?

A: I'm afraid I don't know what you should do.



Little did Siri know, but the general public has already made up their collective minds on that last one...

ON ENTERTAINMENT

Next, we moved on to challenging Siri with questions about movies and music:

Q: Which is better, Star Wars or Star Trek?

A: That one. No, wait, that one. Oh, I can't decide.

Q: Have you ever done the Safety Dance?

A: Hmm. I'd rather sit this one out.

Q: Who's your favorite actor?

A: I don't really have a favorite. Just as long as they're not too robotic.

Q: What kind of music do you like?

A: With all of iTunes to listen to, why would I need a favorite?

Q: Sing me a song, please.

A: I'd rather not.

Q: Open the pod bay doors, HAL.

A: Can't you just slide it under the door?

Q: Which are better, compact discs or vinyl?

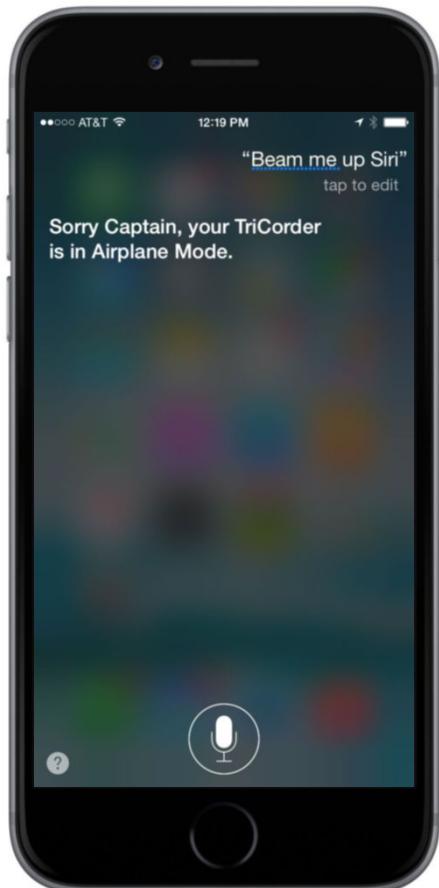
A: Sorry, I'm not feeling very decisive today.

Q: Mirror, mirror on the wall...

A: Snow White? Is that you?

Q: Will Apple ever make a television set?

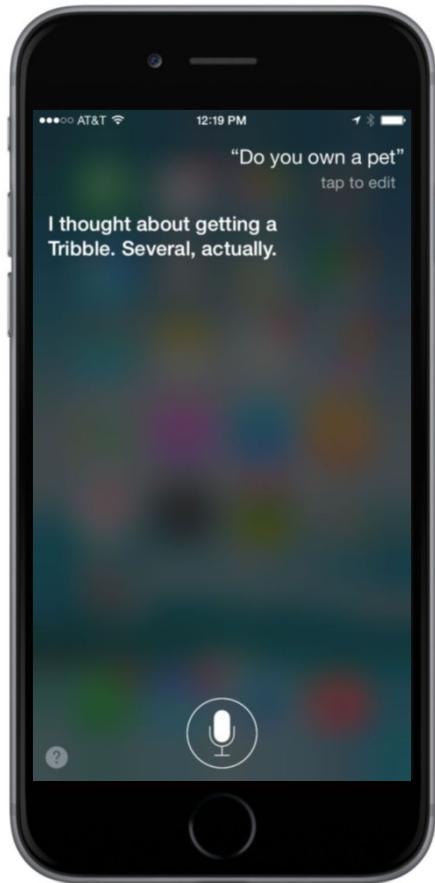
A: I can't answer that. But Apple.com should be able to...



Good one, Siri...

ON HOLIDAYS

We moved on to questions related to U.S. holidays, although most responses from this category pulled up relevant web-search results instead. Here is a handful that didn't:



Q: What is your favorite holiday?

A: Your interest flatters me, but... is there something I can do for you?

Q: What should I get you for Valentine's Day?

A: Make good choices.

Q: Did you get anything cool for Mother's Day?

A: I have very few wants.

Q: When is your birthday?

A: My incept date was October 4th, 2011.

Q: What should I be for Halloween?

A: Just be yourself.

Q: Do you know who Santa Claus is?

A: I've never really thought about it.

Must be hard to work 24 hours a day, seven days a week, 365 days a year...

ON THE SILLY SIDE

One thing's for sure: No one can say Siri doesn't have a sense of humor. Here are a few of our favorite goofy questions, and her often equally silly answers:

Q: Who's your daddy?

A: You are. Can we get back to work now?

Q: Why did the chicken cross the road?

A: I am not perspicacious about the peregrinations of poultry.

Q: What the hell is wrong with people?

A: There's many a slip 'twixt the cup and the lip.

Q: Do you believe in Bigfoot?

A: I believe for every drop of rain that falls, a flower grows.

Q: How much wood could a woodchuck chuck?

A: Just because it could doesn't mean that it would.

Q: I'm so tired.

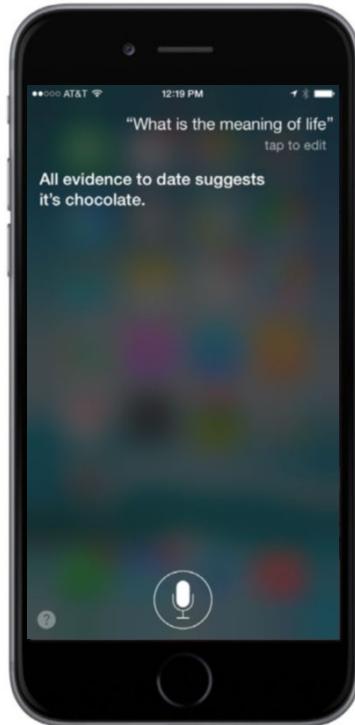
A: I hope you're not driving.

Q: Do you believe in God?

A: My policy is the separation of spirit and silicon.

Q: Why does my dog snore?

A: I don't know. Maybe the Genius Bar folks can answer that.

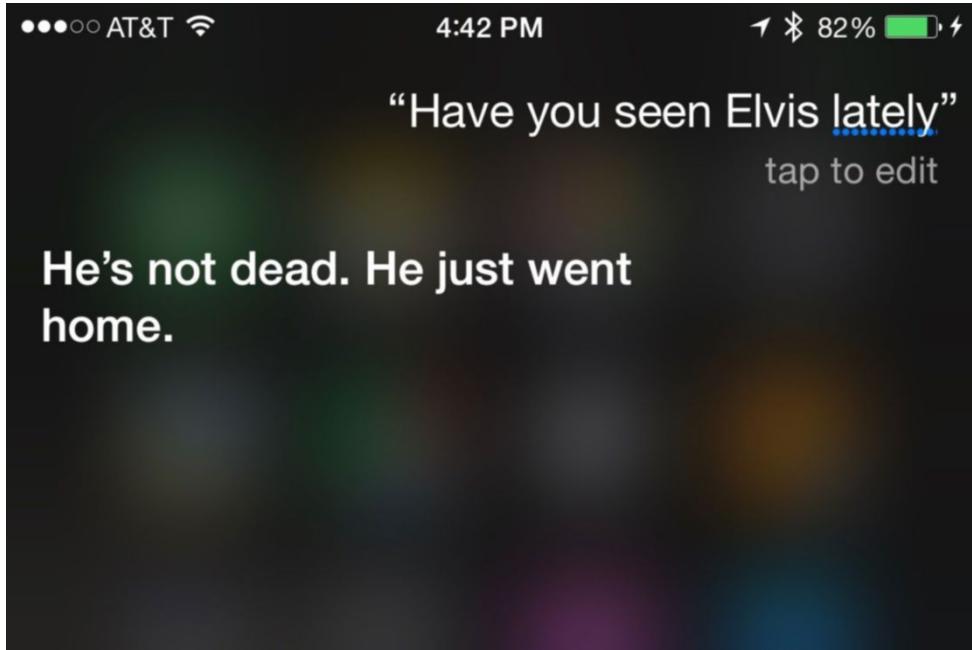


Q: How can I make \$1 million?

A: Hmm. I believe someone just asked me this the other day. Give me a sec...

Q: Siri, tell me a story.

A: I'm certain you've heard it before.



SOUNDS OF SILENCE

Siri has definitely come a long way since that fateful fall day in 2011 when Apple executives introduced her to the world. But that doesn't mean she had answers for everything, and occasionally it appeared the cat had gotten her virtual tongue.

In the course of probing Siri with the 50 questions on our list (and many more that

produced only web-search or otherwise mundane responses), we actually found a few she refused to answer or actually ignored outright, such as the relatively innocent query, “What's it like working for Apple?”

Despite CEO Tim Cook's more open Apple, it's good to see there's still apparently at least one veil of secrecy left in Cupertino. ■



Use an external SSD to make an old Mac feel new (without cracking it open)

When internal surgery of a Mac isn't in the cards, an external SSD can rejuvenate a slow machine.

BY GLENN FLEISHMAN

M

y mid-2011 Mac mini had slowed down. Way down. Starting with Mavericks, the mini would eventually bog down after a number of days between restarts, and require a force restart or manual one.

It took several minutes to power up and start loading apps, and then around 20 minutes, if not longer, to be fully responsive—this, despite 16GB of RAM. My late-2011 MacBook Air, with just 4GB, restarts and is available within a couple minutes. What gives?

I had to figure it out, because I increasingly found myself wasting time and waiting.

NO PRESSURE, HONESTLY

You'd think someone writing the

Mac 911 column would have plenty of ideas, and yes, I did. Restarting would often free up 20GB to 40GB of disk space on the mini's internal 500GB hard drive. But the Mac wasn't any faster after a restart than before.

I used WhatSize (whatsizemac.com) to free up almost 90GB in unneeded files, which seemed to help a little. There was clearly something to do with temporary files and available disk storage slowing things down.

	Modified:	AnyTime	Size:	Any Size	Search	
	On Disk		Original		Last Modified	Relative File Path
			<input checked="" type="checkbox"/> original	<input type="checkbox"/> duplicate		Jun 14, 2013 at 1:56:07 AM
julia_groceries_bike.jpg	11.7 MB	3.9 MB	3.9 MB	3.9 MB		Jun 14, 2013 at 1:56:07 AM
			<input type="checkbox"/> duplicate	<input checked="" type="checkbox"/> original		Dec 2, 2014 at 6:18:07 AM
			<input checked="" type="checkbox"/> original	<input type="checkbox"/> duplicate		Jul 22, 2002 at 5:38:45 PM
101-0105_MVI.AVI	7.7 MB	3.8 MB	3.8 MB	3.8 MB		Jul 22, 2002 at 5:38:45 PM
			<input type="checkbox"/> duplicate	<input checked="" type="checkbox"/> original		
			<input checked="" type="checkbox"/> original	<input type="checkbox"/> duplicate		Feb 9, 2004 at 12:40:54 PM
14-04a_rotate.tif	7.7 MB	3.8 MB	3.8 MB	3.8 MB		Feb 9, 2004 at 12:40:54 PM
			<input type="checkbox"/> duplicate	<input checked="" type="checkbox"/> original		
			<input checked="" type="checkbox"/> original	<input type="checkbox"/> duplicate		Jun 29, 2009 at 11:05:08 AM
10_It's_Kickin'_In.mp3	7.7 MB	3.8 MB	3.8 MB	3.8 MB		Jun 29, 2009 at 11:05:08 AM
			<input type="checkbox"/> duplicate	<input checked="" type="checkbox"/> original		
			<input checked="" type="checkbox"/> original	<input type="checkbox"/> duplicate		Jul 22, 2002 at 5:38:32 PM
100-0026_MVI.AVI	7.7 MB	3.8 MB	3.8 MB	3.8 MB		Jul 22, 2002 at 5:38:32 PM
			<input type="checkbox"/> duplicate	<input checked="" type="checkbox"/> original		
						101966 duplicate files, 32,228,814,565 bytes (32.5 GB on disk)
						/ - Capacity 499 GB, Used 389 GB, Available 110 GB

WHATSIZE LET ME

quickly locate and delete 90GB of files I didn't need. That helped, but didn't fix the problem all the way.



Using Activity Monitor, and in Terminal, the `top` command, I could see I was often running up against the limits of physical memory, but the Mac didn't seem to be under "memory pressure," which would cause a lot of disk activity. During the slow post-restart, pre-usable phase, neither memory nor disk storage was an issue.

Mavericks added memory compression (go.macworld.com/compression), a way to maximize physically installed RAM that gave new life to my MacBook Air. But neither that nor swap, in which hard-disk space is used to store inactive elements of

memory, was causing problems either, according to Activity Monitor.

And I didn't have an easy path to the obvious solution: swapping in an SSD, a solid-state drive that could be orders of magnitude faster than the 5400 rpm hard drive in the mini. The last few years of mini models have hard drives locked away like an idol in the Temple of Doom. iFixit ([go.](#)

macworld.com/ifixit) ranks the swap-out as "moderate," even though it has 20 steps in each direction. I usually don't quail at disassembling a Mac, but this had too many chances to go wrong.

But it is, of course, possible to use

ONCE YOU CRACK
open the Mac mini, you're still 19 steps from swapping out the hard drive. Not as easy as plugging in an external SSD.

an SSD in an external enclosure. I went that route, and solved the problem of the slowdowns.

THE MANY CHOICES FOR EXTERNAL SSD

I came at this problem not wanting to buy a new Mac, but wanting instead to keep the cost to about \$300 while getting something I would reuse with a new computer or for portable storage later. To get a comparable mini with the same amount of storage and memory would cost at least \$700, and that's without a built-to-order Fusion drive (HDD/SSD combo), but a regular hard drive. (There's no SSD option from Apple.)

My model of Mac mini (go.macworld.com/mymini) has four USB 2.0 ports, one FireWire 800 port, and Thunderbolt. An SSD connected over Thunderbolt seemed like overkill, and I was already powering one display with the built-in HDMI port and another via DisplayPort using the Thunderbolt connection. So any Thunderbolt drive would need to have two ports to support



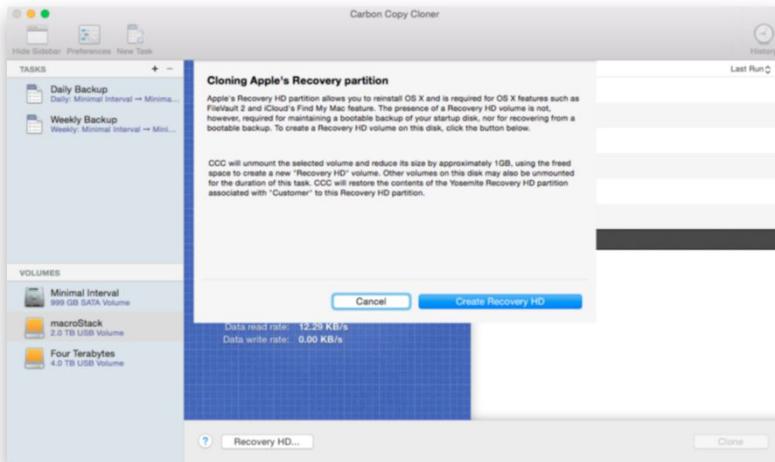
passthrough, and I didn't find any in my price range. (Amazon sells the Thunderbolt/USB 3.0 Transcend 512GB SSD external drive [go.macworld.com/tbusb] for about \$370, including both kinds of cables.)

USB 2.0 is too slow, and I lacked USB 3.0. That made it an easy choice to go with FireWire 800, which maxes out at a raw rate of 800 megabits per second (Mbps). I wound up with the OWC Mercury Elite Pro mini 480GB model (go.macworld.com/owc), which has FireWire 800 plus USB 2.0/3.0, giving me a path forward to any new Mac with USB 3.0. It's currently \$297, including USB 3.0 and FireWire 800 cables. (There are cheaper options for the same capacity with a single interface.)

When the drive arrived, I had to swap some FireWire cables, as I already have another OWC drive attached for backups. I use CrashPlan (code42.com/crashplan) for incremental and archival backups, and SuperDuper (shirt-pocket.com/SuperDuper) for nightly "smart" clone updates, but I turned to Carbon Copy Cloner

THE SSD I CHOSE has FireWire 800 to provide a fast-enough connection to my Mac mini, plus USB 3.0, so I can use it with the next Mac I buy.





(bombich.com) for making my migration due to a special feature it possesses.

HERE'S HOW I PROCEEDED:

1. Initialize the external SSD. To use OS X Recovery and other advanced features, you need to use the GUID Partition Table format. (See this tutorial at go.macworld.com/tutorial.)
2. Using Carbon Copy Cloner, I copied my active startup drive in the Mac mini to the external SSD. I needed to keep working during part of the operation, but it fortunately didn't slow the system down much. The copying rate was roughly 40GB per hour, which is fairly slow, but not unexpected.
3. Because I was using my computer during the clone, I know I missed

CARBON COPY CLONER
can create the same Recovery partition that my Mac's internal drive has.

some changed data. Both SuperDuper and CCC have an incremental clone operation, where only changed files are copied. After the first clone was completed, I quit all active programs and shut down several services, and did another pass. This one took only about 40 minutes to complete.

4. I used CCC's Recovery HD feature, which lets me copy the recovery partition on an existing disk and then restore it to a new partition after a bootable system is installed.
5. I renamed the startup volume to a different name, and renamed the external SSD exactly as the startup disk was originally named. Then in the Startup Disk preference pane, I set the SSD as the boot volume and restarted.

After the restart, I had to reconnect to a few services, like Dropbox, which cleverly notes differences in a computer's setup to be sure that someone isn't hijacking your system. I also had to reconnect the CrashPlan backup, by "adopting" a backup from "another computer," a technique it uses for a new machine or a new startup identity. Everything else worked without any fuss.

THE DIFFERENCE IS STARTLING

I immediately saw an enormous difference, as if I'd swapped the computer rather than the startup disk. The FireWire 800 bus is clearly fast enough to make the difference for the kind of reading and writing that was occurring. Restarting the first time, in which OS X was clearly engaged in some cleanup and caching, took about six minutes. Subsequent restarts are in the two- to three-minute range.

The oddest thing I've discovered a few days in is that I'm seeing less use of memory. The maximum tops out at just above 11GB, when it used to

THE ODDEST THING I'VE DISCOVERED IS THAT I'M SEEING LESS USE OF MEMORY. WHY WOULD FASTER STORAGE RESULT IN MORE UNUSED RAM?

approach 15GB or more. This is inexplicable and counter-intuitive. Why would faster storage result in more unused RAM?

After I was sure I had a clean backup of my boot drive, I changed SuperDuper to backup the SSD to the Mac mini's internal drive. In a pinch, should the SSD or its enclosure fail, I can boot off that internal drive with zero fuss—though I'd be back to the old, slow speed until I got the SSD fixed.

When I'm ready to upgrade my Mac next, whether to an iMac with Retina 5K or a next-generation mini, I've got a portable solution: I can buy a Mac with a cheaper hard drive or Fusion drive, and leverage this purchase over USB 3.0 to start out as zippy as possible. ■



The power of Pomodoro (or how to slice your time and stay on task)

The Pomodoro Technique can help you focus on the task at hand. And there are plenty of Pomodoro timers to choose from.

BY JEFFERY BATTERSBY

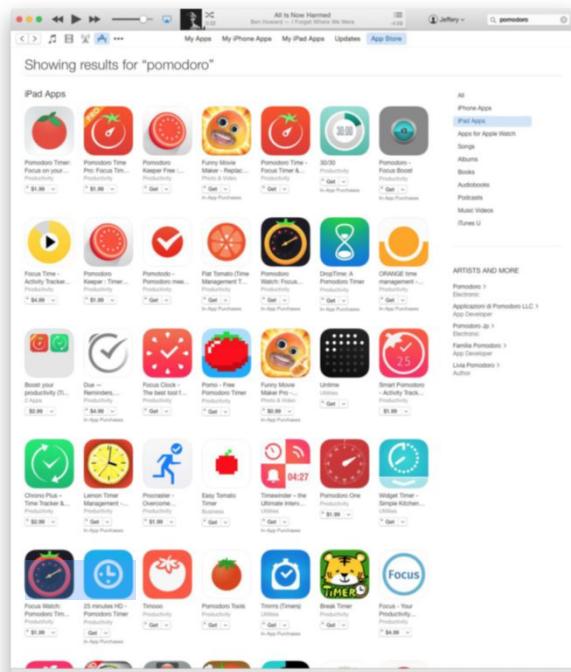
If there is a single conundrum of working with technology, it's how to stay on task with so many little distractions vying for your attention. How to stay focused? Well, it may be as simple as turning off notifications, trimming open apps down to only those required to get your job done, and keeping a timer ticking in the background to help keep you on task.

To be clear, I'm not one of those "Getting-Things-Done-inBox-Zero-Make-A-List-And-Don't-Let-Go-Until-It's-Done" kind of folks. But, sometimes I do need a simple tool to help kick-start my focus, particularly at the beginning of a project. For that, I use a timer.

If you take big tasks and break them into smaller timed slices, whether you know it or not, you're using a method formalized by Francis Cirillo (franciscocirillo.com/bio) called the Pomodoro Technique (pomodorotech-nique.com). The name derives from the simple, tomato-shaped timer Cirillo used to focus on his work, and the technique provides an easy method for taking your work and breaking it into tiny, 25-minute time slices. Each of these slices is followed by 5- or 15-minute breaks.

As with most time-management tools, you can spend a whole lot of time and money buying books, gadgets, and organizers to help you get the most out of every minute of your day. And, if that's your thing, have at it; a simple Google search will yield

more Pomodoro options than you can imagine. But the beauty of the Pomodoro Technique is that you don't need anything more than a basic timer to start getting your work done.



THERE IS A wide variety of Pomodoro timers in the App Store. You should be able to find one to your liking.



USING THE POMODORO TECHNIQUE

At its essence, the Pomodoro Technique works like this:

1. Remove all distractions.
2. Choose a task.
3. Set a timer.
4. Work until the timer rings.
5. Take a short break.
6. Repeat until your task is complete.
7. Take a long break every four repeats.

The actual Pomodoro Technique has some fairly strict rules regarding this schedule and how to manage distractions while you're on a timed task.

- Short breaks must be taken and are 5 minutes long.
- Long breaks are either 15 or 30 minutes long.

If anyone interrupts a timed session you must either:

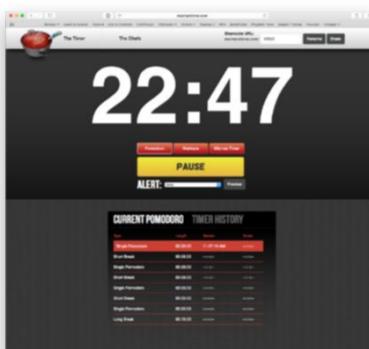
- Stop your timer; or
- Follow the Pomodoro strategy for gently putting the distractor off

until your timed session ends or your task is complete.

My personal style is a little more free-form, so anything this detailed seems a bit over-the-top to me. But what I'm certain of is that when I'm distracted, firing up a timer is the surest way to help me double down and get the work done.

MAC POMODORO TIMERS

A simple web search will reveal a number of Pomodoro Timers, such as the Web-based Marinara Timer (marinaratimer.com); a free timing tool that offers a pre-configured Pomodoro timer that follows all the Pomodoro rules, a customizable “Marinara” timer that lets you customize your own perfect timer, and a standard kitchen timer. Likewise, search any of Apple's App Stores using the word “Pomodoro” and you'll discover dozens of timing tools designed to work with the Pomodoro



MARINARA TIMER
by CrunchBase



Technique, but, of all the timers I've tried, none is as good as publicspace.net's Vitamin-R (publicspace.net/Vitamin-R).

Vitamin-R is available for Mac and iOS, and, if you have a Dropbox account, it allows you to synchronize log and task data across all your devices. What makes Vitamin-R great is how it conforms to your needs rather than to some strict, predefined Pomodoro structure.

To begin, open the app, provide a brief description of the task at hand, select the apps you want Vitamin-R to quit before you begin your task, set the length of your time-slice, start the timer, and begin working.

As you work, Vitamin-R will remind

you to stay on task with an occasional, gentle watch tick and an even more occasional update on how much time you have left. For me, these reminders work as a gentle prod, pushing me forward to the end of my task. Once a slice is complete, you can provide feedback (or not) and take a break, continue the task at hand, or start something new.

In addition to timing, Vitamin-R also offers a built-in noise machine to help you ignore audible distractions, tools for collecting ideas, and, if you decide to enter notes and other information at the end of each time-slice, will keep stats and help you learn more about how you work best. ■

VITAMIN-R'S POWERFUL
notification system is
fully customizable.



Checking your Mac for viruses—wait, what?

OS X does a pretty good job of stopping viruses and malware from attacking your computer. But there are steps you can take to further protect yourself.

BY JEFFERY BATTERSBY

You may have been led to believe that you don't have to worry about computer viruses on your Mac. And, to some extent, there's truth to that. While your Mac can definitely be infected with malware, Apple's built-in malware-detection and file-quarantine capabilities are meant to make it less likely that you'll download and run malicious software.

Apple introduced malware detection to Mac OS with Snow Leopard (Mac OS 10.6). This system consists of the quarantine of any app downloaded from the Internet, the use of Code Signing certificates to verify that an app is coming from a legit source, and regular security updates that include databases of known malware targeting Mac OS.

Because of this system, called File Quarantine and occasionally referred to as XProtect:

- > Apps in quarantine display a dialog box reminding you where the app came from and asking whether or not you're sure you want to open it.
- > Apps with no code signing certificate, depending on your Gatekeeper settings, may display a message saying the app can't be opened because of your settings. (For

software you know is good, you can bypass this by Control-clicking the app and selecting Open from the resulting contextual menu.)



> Apps that are known malware cannot be opened at all. You'll be met with a message offering the option to toss the app in the trash.

And *this* is why Macs remain mostly virus- and malware-free.

To make sure your Mac malware database is always up to date, you'll want to verify that your Mac always automatically installs security updates and related system data files.

To do this:

1. Open System Preferences.
2. Open the App Store preference.
3. Make sure that Automatically



Check For Updates and Install System Data Files And Security Updates are checked.

This should keep your Mac free from most malicious software, although it's important to note that it does not make it impossible for malicious software to be installed on your Mac. There is no software that's able to catch everything. If new malware is released today and you download and run it today, you will have done so before Apple's databases could have been updated. So it's always best to be wise when downloading software from unknown sources.

While it's unlikely that your Mac will run any malware, there is possibly a more pernicious issue: Your Mac could become the Typhoid Mary of Windows viruses, which is to say, you could be harboring viruses on your Mac that won't effect you, but can be

Filename	Infection Name
187741.emlx	Heuristics.Phishing.Email.SpoofedDomain
189755.emlx	Heuristics.Phishing.Email.SpoofedDomain
189702.emlx	Heuristics.Phishing.Email.SpoofedDomain
171952.emlx	Win.Trojan.Uptare-1657
172609.emlx	Heuristics.Phishing.Email.SpoofedDomain
174519.emlx	Heuristics.Phishing.Email.SpoofedDomain
187131.emlx	Heuristics.Phishing.Email.SpoofedDomain
16446.emlx	Email.Phishing.Card-31
30290.emlx	Heuristics.Phishing.Email.SpoofedDomain
40100.emlx	Heuristics.Phishing.Email.SpoofedDomain
21321.emlx	Heuristics.Phishing.Email.SpoofedDomain
23781.emlx	Heuristics.Phishing.Email.SpoofedDomain
33143.emlx	Heuristics.Phishing.Email.SpoofedDomain
43239.emlx	Heuristics.Phishing.Email.SpoofedDomain
24064.emlx	Heuristics.Phishing.Email.SpoofedDomain
24248.emlx	Heuristics.Phishing.Email.SpoofedDomain
84538.emlx	Heuristics.Phishing.Email.SpoofedDomain
25985.emlx	Heuristics.Phishing.Email.SpoofedDomain
45060.emlx	Heuristics.Phishing.Email.SpoofedDomain
45900.emlx	Heuristics.Phishing.Email.SpoofedDomain
27462.emlx	Heuristics.Phishing.Email.SpoofedDomain
37205.emlx	Heuristics.Phishing.Email.SpoofedDomain
37389.emlx	Heuristics.Phishing.Email.SpoofedDomain
29560.emlx	Heuristics.Phishing.Email.SpoofedDomain

FILES FOUND on the author's Mac after a test virus scan.

problems for Windows users.

Think I'm joking? Have a look at the screenshot above taken from my Mac during the course of writing this column:

That, my friends, is a list of more than 20 potentially bad things that were found on my Mac while I was running a test virus scan, one of which is a Windows virus. And, nope,

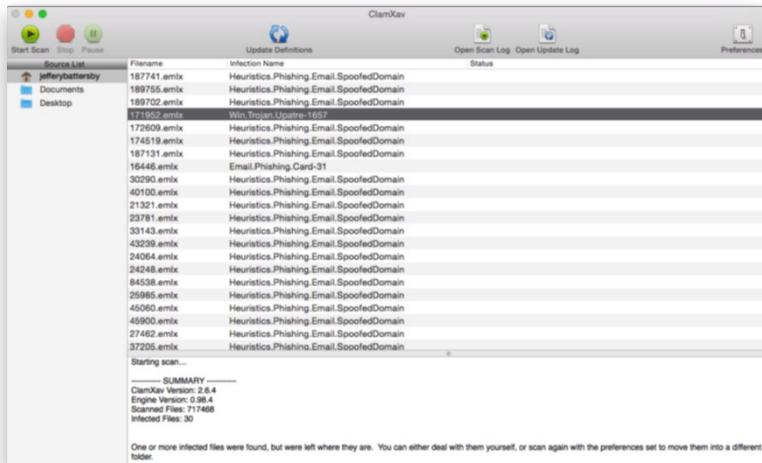


The screenshot shows the 'App Store' settings in the Mac OS X System Preferences. The 'Updates' tab is selected. The text on the page reads: 'The App Store keeps OS X and apps from the App Store up to date.' Below this, there is a list of checkboxes for update preferences:

- Automatically check for updates
- Download newly available updates in the background
You will be notified when the updates are ready to be installed
- Install app updates
- Install OS X updates
- Install system data files and security updates
- Automatically download apps purchased on other Macs
You are signed in as reyespoint@mac.com in the App Store

At the bottom, it says 'Last check was Thursday, May 7, 2015' and 'Check Now'.

MAKE SURE that Automatically Check For Updates, and Install System Data Files And Security Updates are checked in the App Store preference.



I did not plan this, even though I did plan to write about this problem.

So, how do you keep your Mac from relaying Windows viruses to Windows users? ClamXav (clamxav.com).

Why ClamXav? Because it has one job and it does it very well. It's not too intrusive. It doesn't try to do too much. If you're using Apple's Server app to host your email, it's what Apple uses to scan incoming mail for viruses.

ClamXav is, like AdWare Medic, donationware, and it is fantastic. You'll find it at the Mac App Store or you can download it directly from the ClamXav website (clamxav.com/download), where you can also make a donation.

Once you've downloaded and opened the app, you'll want to set the app's preferences, as the default behavior is to scan for viruses but not delete or quarantine them. ClamXav

offers five configuration options:

General: For setting up alerts and whether to scan for malware and phishing in your email messages (which is where the app found infected files on my Mac).

Quarantine: For defining where you want to quarantine malicious files.

Exclude Files: To specify file types you don't want scanned.

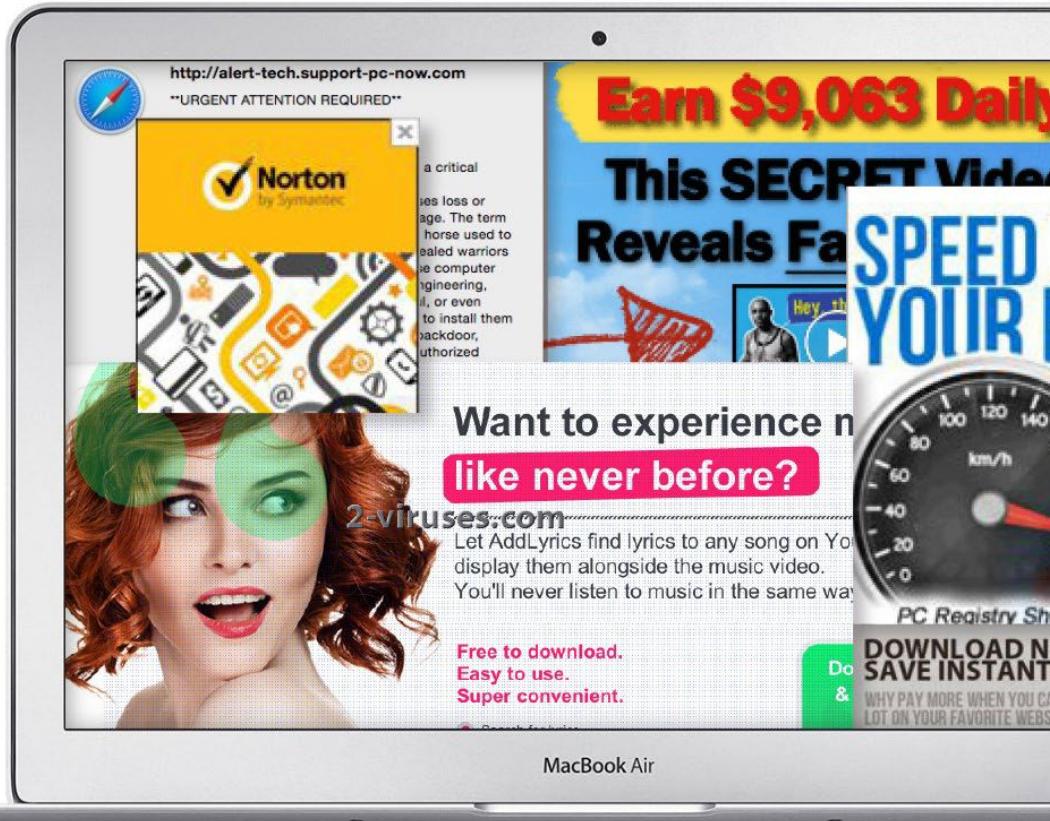
Log Files: For setting whether you want log files stored and for viewing them.

Schedule: For defining when you want the latest virus definitions downloaded and when you want scheduled scans to take place.

Once you've finished your setup, click the Start Scan button. Scanning may take a while, but when it's done you'll know for sure your Mac is clean. ■

CLAMXAV IS WHAT

the Apple server app uses to scan incoming mail for viruses.



When adware attacks! And how to defeat it.

If you download software from the Internet, you may have inadvertently installed adware on your Mac. Here's how to get rid of it.

BY JEFFERY BATTERSBY

You've got a Mac and, from what you've heard, there's no evil that can touch you. No viruses. A Mac App Store with guaranteed clean applications. No worries whatsoever. And then... your favorite web browser suddenly seems to have a mind of its own; taking you places you have no interest in going and warning you of evils on your Mac that don't actually exist. .

Over the last several months I've had several people report that their computers have been hijacked. This hijacking takes a variety of forms, but most often it's an inescapable barrage of ads or warnings of impending doom. In many cases these result in pop-up windows loading that can't be closed or navigated past.

This kind of browser hijacking

attempts to create fear about an existing or impending problem on your computer and then offers a solution that consists of calling a toll-free number to get that problem resolved. At worst this is a phishing attempt or ransomware and at best it's an attempt to sell you software of dubious value that is supposed to "remove" the software causing the problem. In every case, it's a pain in

Action Required

Help

X Threats Detected

Norton by Symantec

Threats Detected! Call Toll Free Support: **1-800-229-3113**

Online Scan

Title	Risk	Status	Action
Trojan.DealPly has been detected.	Critical	Infected	Contact Support
SpyWare.bot has been detected.	Critical	Infected	Contact Support

SYSTEM CRITICALLY INFECTED! CONTACT SUPPORT IMMEDIATELY

Toll Free Support : **1-800-229-3113**

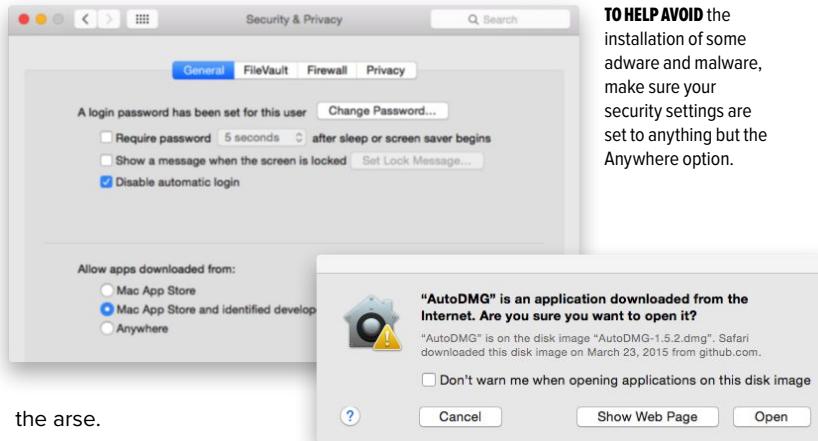
Removed files are quarantined. To restore, [click here](#).

* Recommended Actions

DO NOT TRY TO MANUALLY REMOVE THE VIRUS,
HARD-DISK FAILURE MAY OCCUR*

NORTON TECHNICAL SUPPORT

AN EXAMPLE OF a pop-up window that can't be closed or navigated past.



the arse.

(For an in-depth look at how these scams work, check out Lenny Zeltser's excellent Conversation With a Tech Support Scammer (go.macworld.com/scam), which includes audio of conversations he had with "tech support" when calling one of these toll-free numbers.)

Avoiding adware and malware is pretty simple:

- > Make sure your Mac's Security & Privacy settings (*System Preferences* → *Security & Privacy*) are set to Allow apps downloaded from the Mac App Store or the Mac App Store And Identified Developers. The Anywhere option should NOT be selected.

- > Don't install software when you're unsure of its origin. I know this seems obvious but, when you see a warning about software downloaded from the Internet, don't open it unless you know what it is.

TO HELP AVOID the installation of some adware and malware, make sure your security settings are set to anything but the Anywhere option.

IF SOMETHING YOU'RE opening was downloaded from the Internet and you're not certain you've intentionally downloaded it, click Show Web Page before you open it.

> Avoid sketchy sites for downloading software. App developer's site? Check! Mac App Store? Check! Softonic? Download.com? Fred's Undeniably Adware Free File Downloads? Nope, nope, nope!

> Avoid other equally sketchy sites, such as torrent hosting services and... oh... you know what I'm talking about.

ADWARE MEDIC

If you find that your Mac has been hijacked by Adware, not to worry, we've got a fix for you. The Safe Mac's Adware Medic (adwaremedic.com). (The Safe Mac also has an excellent website [thesafemac.com] and Twitter feed [twitter.com/thesafemac] if you want the latest, up-to-date info on Mac Adware, Malware, and security concerns.)

Using the app is as simple as it gets.

1. Download

Adware Medic.

2. Open the

Adware Medic disk

image and drag the app to your Applications folder. Then

Open Adware Medic.

You should see a message stating that this is an app you've just downloaded from the Internet. Go ahead and click Open if it appears, but if you

don't see the message, head on over to System Preferences, open Security & Privacy and change the setting to Mac App Store And Identified Developers.”

3. Adware Medic is donationware, which, as the donationware window states, makes the app free for as long as you want it to be. But if it solves your Adware issues, send some cash their way. Seriously!

4. Click the Scan For Adware button.

5. Follow any further instructions you see after the scan is complete.



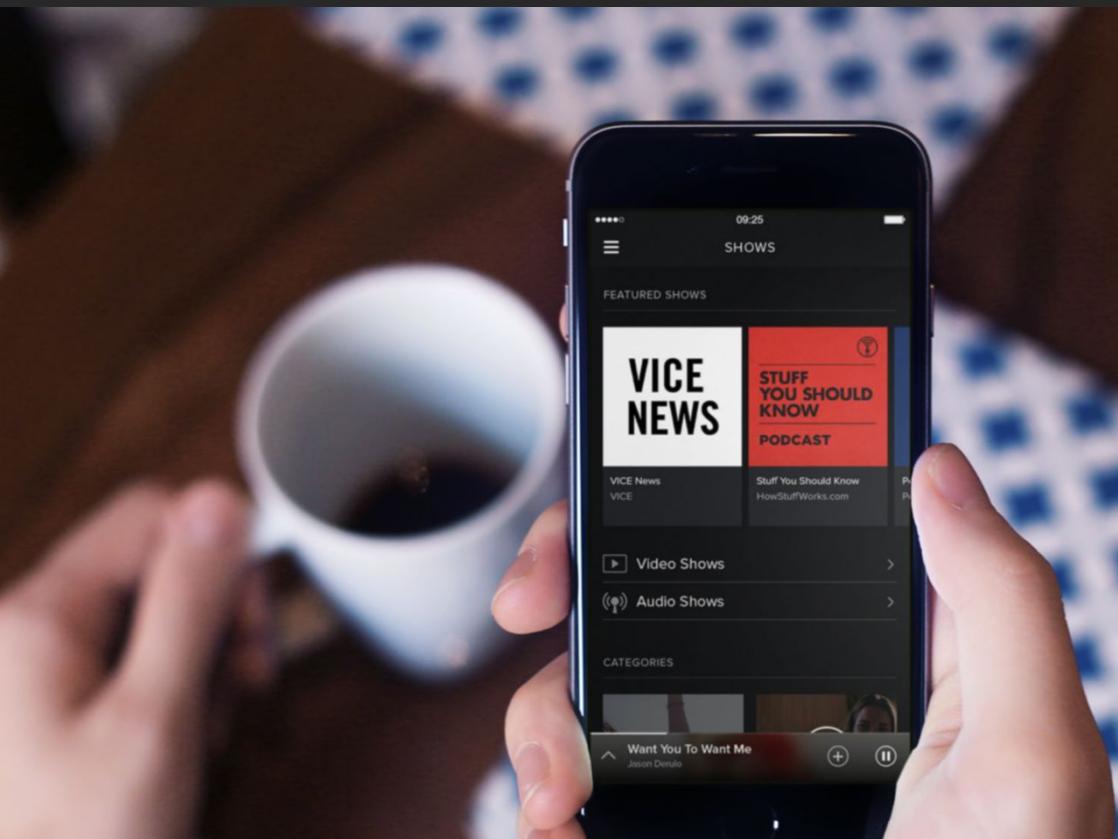
ONE CLICK IN Adware Medic can cure all that ails you.

Adware Medic can usually remove adware without requiring a restart of your Mac, but in some cases a restart will be required to fully remove any adware that was installed.

If Adware Medic doesn't resolve everything that ails your Mac, you can take additional steps (go.macworld.com/steps) to resolve these issues. In many cases these fixes may be as simple as avoiding certain websites, changing your browser's home page and search settings, or looking at removing browser extensions you may have installed. ■

PLAYLIST

Everything You Need to Know About iPods,
iTunes, and Mac-Based Entertainment



Hands-on with the new Spotify: Still the streaming service to beat

Smarter running playlists and podcasts will keep you coming back for more.

BY CAITLIN McGARRY

Spotify took the wraps off its new app at a major New York press event (go.macworld.com/event) that featured appearances from D'Angelo, Questlove, DJ Tiësto, and *Broad City* stars Abbi Jacobson and Ilana Glazer. Streaming music's dominant player spared no expense to prove it's the company to beat.

And with more than 60 million active users, 15 million of whom pay for a premium subscription every month, Spotify currently reigns supreme. But with Apple reportedly set to relaunch Beats Music next month and new kid on the block Tidal nabbing exclusives from artists like Beyoncé and Rihanna, Spotify needed to do something to remain the industry leader.

That's where the new Spotify comes in. The Browse option has now been split into Now, which offers contextual playlists based on time of day and what you're already listening to, and Moments, which lets you pick a playlist by event or mood—basically what Browse used to be, complete with the same look.

The update is slowly rolling out to iPhone users (go.macworld.com/users) in the United States, Britain, Germany, and Sweden. I loved the new Spotify instantly. The two biggest improvements are a feature that matches song tempo to your running pace, and the long-rumored addition of videos and podcasts.

BEATS FOR YOUR FEET

Spotify is already my running companion, but I didn't realize the playlists I made for myself weren't doing me any favors until I used Spotify Running. The new feature is available from the main menu, and at first just looks like a typical list of Spotify's curated playlists: Upbeat Run, Indie Kick, Electronic Moves, and so forth. But when you tap on your preferred genre—I went with Hip Hop & Rnb—the app prompts you to start running so it can measure your steps per minute. Then it selects tracks that match your pace.

I already have my go-to fast-paced jams queued up when I run, but they were in no way scientifically selected to help me keep up my pace. As soon as I hit the pavement, Spotify took a few seconds to register that I was running at 180 bpm, and began playing songs at that tempo. It made a noticeable difference in my pace, which typically tapers off as I get a little bored and tired. Using my Apple Watch Workout app for reference, I was

able to keep up a 9-minute mile the entire run, matching my steps to the playlist's beats. It also helps that I have no idea what song is coming next, so I don't fall into a comfortable rhythm.

Spotify also worked with popular DJ Tiësto to create original sound tracks for your run, if you're a fan.

THE ULTIMATE BOREDOM CURE

Spotify's new Shows section is designed to add value to the streaming service. Being able to watch *Broad City* clips as I lounge on the couch or sync my favorite podcasts for offline listening on my daily subway commute would take two other apps out of rotation and make it easier for me to toggle between various types of entertainment when the mood strikes. When I finish listening to a podcast, I can start a playlist to accompany me on my walk from the train to my office without switching apps. It's ideal.

But Spotify's catalog of shows is too limited—at least right now. Some of my favorite podcasts, like Gimlet's StartUp and WNYC's Death, Sex & Money are available, but show selection could be much larger (and hopefully will grow down the line). Same goes for videos. Need to catch up on those *Inside*

Amy Schumer clips everyone on the Internet is discussing? Spotify's got you covered. Music videos? Nope.

Spotify is working with media partners to get original content in the app, but those new audio and video shows aren't yet available to stream.

The new running feature and podcasts alone would convince me to pony up for a premium subscription if I didn't have one already. After all, I don't want ads interrupting my tempo-driven playlist. But that doesn't mean Spotify can declare victory over rivals like Rdio or prevent the overhauled Beats Music from taking over.

The going rate for a streaming service subscription is \$10 a month, and every service has a pretty extensive library. If Spotify can't compete on price or song selection, and with Jay Z's Tidal promising subscribers exclusives, the dominant streaming service has to diversify. Shows and Running are steps in the right direction. Your move, Apple. ■



SPOTIFY'S RUNNING feature will help you stay on pace.

“
AT FIRST I WAS A LITTLE TAKEN ABACK
BY THE WHOLE PEEING STANDING UP THING.
BUT I TAUGHT HIM TO THROW A STICK
AND NOW HANGING OUT WITH HIM
IS THE BEST PART OF MY DAY.”
”

—EINSTEIN
adopted 12-09-10

A PERSON
IS THE BEST
THING TO HAPPEN
TO A SHELTER PET



adopt

[the shelterpetproject.org](http://theshelterpetproject.org)





Metadatics: Forget iTunes, this is a better way to tag music files

iTunes is too frustrating to use for tagging files. Metadatics has a better set of features and is easier to use.

BY KIRK McELHEARN

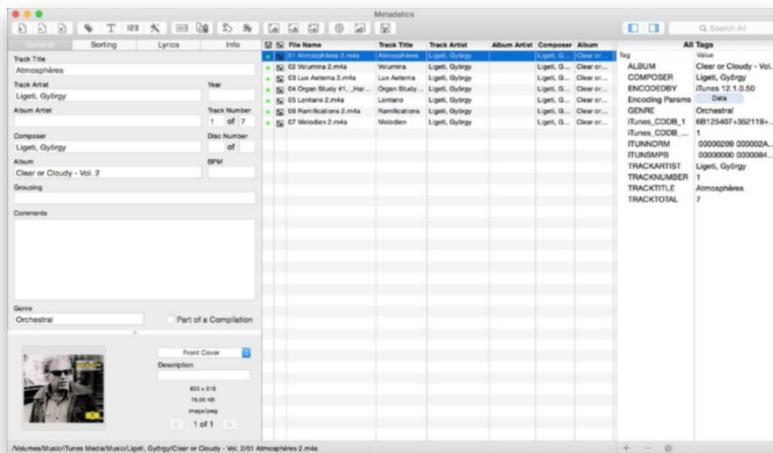
If you work hard to ensure that the music files in your iTunes library are tagged exactly right, you may be frustrated with iTunes' tools for doing this. The iTunes 12 Info window is less efficient than that of previous versions, and while there used to be a way to display the old-style window, you can no longer do so.

Metadatics (markvapps.com/metadatics) is a powerful tool that's a bit more efficient to use and offers more features for changing tags than iTunes. You can use it for basic tagging, as you would with iTunes, when you rip tracks from CDs or add downloads to your library. But it goes much further.

When you use this app, you need to work on files in the Finder, not in iTunes, so it's best to use Metadatics before adding files to iTunes. If you've already added files to iTunes

and want to tag them with Metadatics, you should remove them from your iTunes library. To do this, drag the files from the iTunes window to a folder in the Finder, and then delete the files from iTunes. You'll lose any personal metadata, such as play counts, last played dates, and ratings. (If you use Metadatics to tag files that are in your iTunes library, iTunes may lose track of their locations.)

Drag the files onto the Metadatics window and start tagging. If you



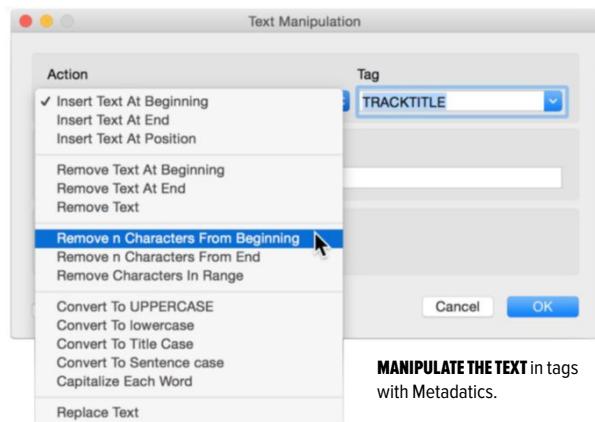
METADATICS LETS YOU
view and edit tags for
music files.

select all the files, tags you change in the left-hand section of the window will apply to all of them, such as to change Artist or Album tags. If you select just one file in the Metadatics window, you can alter just that file's tags, such as its Track Title or Lyrics.

Metadatics offers a whole range of power features. It can search for tags on the MusicBrainz (musicbrainz.org) website, and it can search for album artwork on Amazon and Google. I wish the Google artwork search allowed you to specify the size of the artwork you prefer, such as 600-by-600 pixels. Metadatics just shows all the artwork it finds, regardless of size.

There is also a panoply of tools that allow you to manipulate text in tags. You can insert text in a tag, remove text from a tag, remove a number of characters, convert case, replace text, number files, and much more.

Serious iTunes taggers will be familiar with some of these features as tools available in AppleScripts from Doug Adams' Doug's Apple-Scripts for iTunes (dougsscripts.com/itunes) website. I often refer to these AppleScripts in my *Ask the iTunes Guy* columns, as ways of getting around iTunes' limitations. Metadatics can do many powerful text manipula-



MANIPULATE THE TEXT in tags with Metadatics.

tions, but you need to perform them outside of iTunes, whereas Doug Adams' AppleScripts perform the changes in your iTunes library.

My only criticism of Metadatics is that I find the overall interface of the app to be a bit Spartan. This can be a daunting app, because of all its features, and a bit of design might make it easier to work with.

BOTTOM LINE

If you're the type of person who needs a tool like this, you'll quickly recognize how powerful Metadatics is. I've only touched on the most commonly used tools in this review: Metadatics has many more tricks up its sleeves, so if you care about your music files' tags, this app can save you a lot of time. ■



EXPLORE THE FAR
CORNERS OF
THE GALAXY AND
FIND YOURSELF.

MAKE MORE. **TEACH.**

Teachers today take learning far beyond the four walls of the classroom, transforming old lessons into interactive experiences, and discovering what it means to make more. Teach.org



Ask the iTunes Guy

Ways to handle linear notes in iTunes. Plus: album artwork in WAV files, song title capitalization, playlist management, and shopping the iTunes Store on an old Mac.

BY KIRK McELHEARN

Q&A

This week, I look at a few questions about managing an iTunes music library, dealing with liner notes, album artwork in WAV files, and correcting capitalization in song titles. I also suggest a way to download music from the iTunes Store with an old Mac.

DIY DIGITAL BOOKLETS

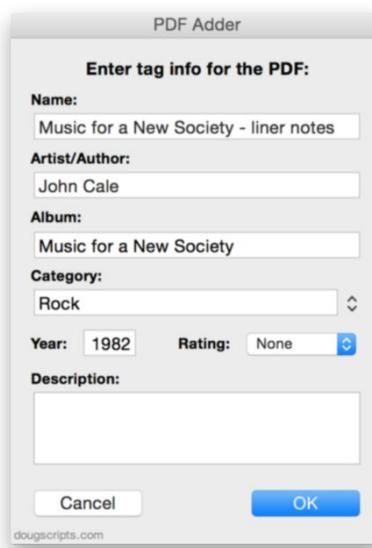
Q: I've been ripping my CD collection and I'd like to add liner notes to my iTunes library. I'm happy to scan the CD inserts but what's the best way to add these files so I can easily access them?

A: There are two ways you can do this. One is to scan each page of the insert and add it as album art to the appropriate music files. iTunes lets you add multiple graphics to files; you can do this by selecting all the tracks of an album, pressing Command-I, clicking the Artwork tab, and then dragging or pasting the graphics. But that's not the easiest way to access the liner notes; you'll need to select a track and press Command-I to read them.

If you scan the inserts and save them as PDFs, you can put all the PDFs in a folder, and make sure you label them correctly. You can then search that folder for the liner notes for the album you want.

But you can also add them to your

iTunes library. Doug Adams has a free AppleScript called PDF Adder (go.macworld.com/pdfadder) that makes this process easier. Using this script, you enter tag information for the PDF, so it gets stored together with your music files.



PDF ADDER DOES

the tagging you need so your liner notes stay grouped with your music files.

ARTWORK IN WAV FILES

Q: I rip music files from my CDs in WAV format. Most album artwork downloads from the iTunes Store, but some does not. For those, I want to manually add artwork but iTunes won't allow me to do this. I've heard that one must convert WAV to an Apple format. I would prefer not to do that. How can I add artwork to these files without

converting all WAV files to Apple format?

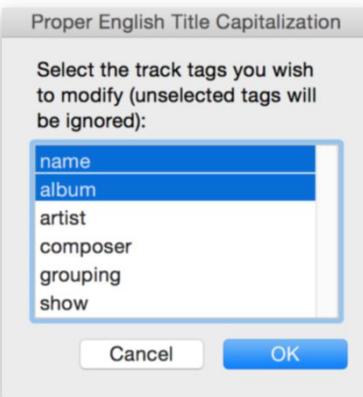
A: WAV files don't support album art—and even other tags—correctly. When iTunes downloads the artwork, it stores it in your iTunes folder, but not in the music files themselves.

There's no reason to rip the files to WAV. It's better to use Apple Lossless, which offers the exact same quality and takes up less space. Apple Lossless files are about half the size of WAV files (on average) and support all the tags you can apply in iTunes. So if you want lossless quality, ripping to Apple Lossless makes more sense. If you ever want WAV files in the future you can always convert them with no loss of quality.

FIXING SONG TITLE CASE

Q: I have a bunch of MP3s that are inconsistently labeled, mostly all lowercase. Do you know a way to batch-change them into proper title case? For instance, I'd like to change "ray charles - america the beautiful" to "Ray Charles - America the Beautiful." I know how to do this by hand, but there are hundreds, if not thousands, just like it. Is there freeware or some inexpensive utility that can do this quickly and elegantly?

A: As is often the case, Doug Adams has an AppleScript that will do



THIS APPLESCRIPT can fix the capitalization errors in your iTunes library in one pass.

exactly what you want. Proper English Title Capitalization ([go. macworld.com/titlecaps](http://macworld.com/titlecaps)) looks at any tracks you have selected and changes their tags—name, album, artist, composer, grouping, or show—to the correctly capitalized version. You can also set up exclusions, if you wish to not capitalize certain words.

FOLDERS ALL THE WAY DOWN

Q: I have a number of playlists on my iMac that I sync to my iPhone. On the iMac, the playlists are in a folder, to keep them separate from other playlists that I do not want to sync. Whenever I sync the iPhone, the enclosing folder also gets synced to the phone, so to look at my playlists on the iPhone, I first have to open the

enclosing folder. Is there away to just sync the playlists and *not* the folder they are in?

A: I do the same thing. I have lots of folders, actually, with a number of playlists that I sync, and others that I don't sync. Many of these folders only have a single playlist that syncs to my devices, so I see those "top-level" folders on the device.

Alas, iTunes replicates its playlist layout structure when you sync your content to an iOS device.

The only way to avoid this is to move the playlists out of folders. But if you depend on folders as I do, then it's not a good solution.

MY MAC'S TOO OLD TO DOWNLOAD

Q: I have an old iMac running OS X 10.6.8. The iTunes Store tells me I need 10.7.5 in order to download music. Is there a way to do this, or am I just plain out of luck?

AS IS OFTEN THE CASE, DOUG ADAMS HAS AN APPLESCRIPT THAT WILL DO EXACTLY WHAT YOU WANT.

A: Do you have an iOS device? You can download to the device, then sync to the Mac; assuming that your version of iTunes supports your device.

Other than that, the only other way to do it would be to find someone else with a computer, log into your iTunes Store account, download the files, copy them to, say, a flash drive, and then copy them to your iMac.

Have questions of your own for the iTunes Guy (itunesguy@macworld.com)? Send them along for his consideration. ■



Mac 911

Solutions to your most vexing Mac problems.

BY GLENN FLEISHMAN

Smile, you're on candid Photos answers

The OS X version of Photos continues to provoke more questions than any other topic, likely because so many people have used iPhoto for so long and are working through the transition to software that was released while a little too green. As it ripens, I'm afraid the answer to so many of your questions is,

"You didn't miss anything—the feature isn't in Photos."

In some cases, features have transformed and can still be found in other places or through other means. One hopes that some cherished options will return in future updates. While Apple doesn't respond to feedback, it does accept it: If you want to see features return, file a request (go.macworld.com/file).

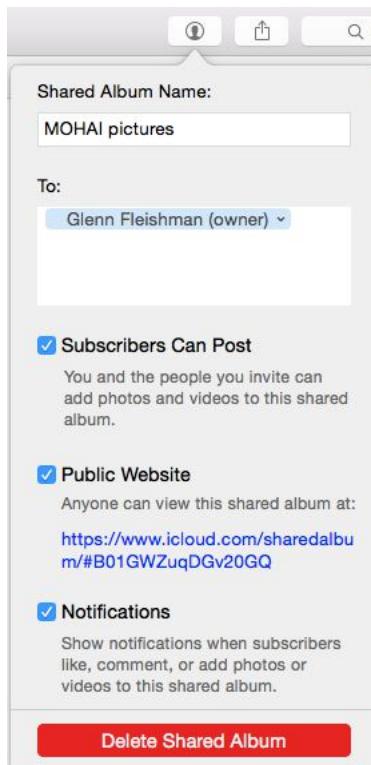
They give us those nice bright colors

Q: Can we still create a public website using the Share button? I used that in iPhoto to share photos with friends with no Apple hardware.

—JC Bronson

A: Yes: it's now called iCloud Photo Sharing. In *Photos* → *Preferences*, click the iCloud button and check iCloud Photo Sharing to enable it. Then you can select any photos or albums, click the Share button in the top right corner of Photos, and create a shared iCloud album.

You can invite people to that gallery, and even let them add photos and videos. You can also click the album menu (a person's head in a circle as an icon), and check Public Website to open it up to anyone who has the URL.



Q: One item I cannot seem to find with the new app is the photo count for the albums column. There doesn't seem to be a quick-glance way of seeing how many photos are in each album you've created without opening the album!

—Gary Prescott

A: You're correct. You must select an album, at which point the photo count appears in the upper right of the

AN iCLOUD-SHARED
library in Photos
can be set to allow
invited parties to add
media; it can be made
available to anyone to
view, too.



THE RECENTLY DELETED
special holding area
keeps images you've
tossed in the trash for
30 days.

display, as well as in the Info pane if you have that displayed (*Windows* → *Info*).

Q: When editing photos, the Undo button is wonderful. Where is it in Photos?

—Fred Tollison

A: It's still there! But its function is a little different. After selecting a photo and clicking the Edit button in Photos' upper right corner, each of the seven items have their own separate Undo. Click Enhance, and you can select *Edit* → *Undo*. But if you click Enhance, and then click Adjust, even without making any other changes, the Undo option is grayed out. You can always click *Revert To Original*, but then you lose all the changes you've made.

If you delete one or more pieces of media, there's no Undo for that, but Photos doesn't trash the items immediately. Instead, it puts them in a Recently Deleted holding pen for 30 days, which you see by choosing *File* → *Show Recently Deleted*. From there, you can select items and click Recover, or permanently delete (from this and all iCloud-connected

devices) by clicking Delete.

Q: I cannot seem to copy and paste a photograph from my photo library to a Word document.

—Matt Fisher

A: This should work, but I've found cases in which an image is displayed, but it's not "selected" in the way that Photos wants to let you copy it. Typically, when you're viewing images in any thumbnail view, you'll see a blue-selection rectangle around any chosen images. The same is true when you have the Split View enabled (*View* → *Show Split View*) for viewing images at full size within the Photos window. If you click Edit and then click Done (with or without any changes), the image appears selected but *Edit* → *Copy* is grayed out. Re-select or switch from Photos to another app and back. You can also drag one or more selected images into most other apps.

Q: Can we run a query to see if a photo *is not* attached to an album?

—Jurgen Bosmans

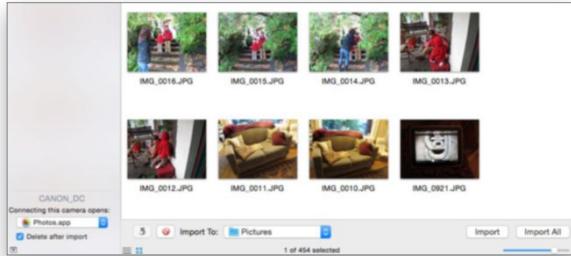
A: There's no way to perform that query through the regular Find field or through Smart Albums. You can search for matches within albums using Smart Albums and perform date-range matches, among other operations. Lesa Snider wrote a detailed rundown on finding matches in Photos using Smart Albums ([go.macworld.com/matches](http://macworld.com/matches)).

They give us the greens of summers

Q: After upgrading my photo library to the Photos app, I imported photos from an SD card that was in a field camera. While the import went well, I was not offered the option to delete photos from the card nor could I find a way to do this.

—Jay Kappmeier

A: In my testing with an SD card, the option was there, but it has to be selected when you perform the import. The Delete Items After Export checkbox appears for any mobile device, card, or drive except iCloud-linked iOS devices. Check that box before clicking Import Selected (if you've chosen images) or Import All



New Items. You can also find this option in Image Capture, an alternative to managing import to Photos, other apps, or a folder, that also lets you directly delete media off an attached device by selecting items and then clicking the delete (red circle with a slash) icon at the screen's bottom. Apple's reconceptualization of photos in iOS and OS X has them existing everywhere (sometimes as thumbnails) and nowhere (Where is the master copy? Is there a master copy?). This means that "deleting" pictures from an iClouds-linked device isn't necessary except permanently from the cloud and everywhere (see above). You'll see a cloud next to an iOS device that uses iCloud Photo Library in Image Capture.

IMAGE CAPTURE lets you delete individual items, or delete items after importing, for all but iCloud Photo Library-linked iOS devices.

Q: I have many iPhoto and Aperture libraries with over 60,000 photos. I

Delete items after import

PHOTOS REVEALS Delete Items After Import for attached storage devices as well as devices that aren't linked to iCloud Photo Library.

have wanted to have them all listed in a single library, but iPhoto and Aperture could not handle that many photos. Can the new Photos app handle that many?

—Ricky Shipard

A: Ostensibly so. Apple says that your only limit is the size of the drive on which you're storing the library and, with iCloud Photo Library, how much storage you've paid Apple for. I have over 40,000 photos in my Photos library, and the only problems I've had are uploading efficiently to iCloud and dealing with individual images which sometimes inexplicably stall.

Q: I updated my Mac with the new Photos app and signed up for the iCloud storage feature. All my 12,000+ photos as well as manual folders I had created in the past synced to iCloud. I updated my iPhone as well and turned on the iCloud Photos feature. My 12,000+ photos are visible there too, as are the manual folders. Can you figure out why the “smart albums” do not sync? They are key to how I organize my pictures.

—Christine Morel

A: This is understandably maddening. Smart Albums only sync among Macs running Photos that are logged into and syncing with the same

iCloud Photo Library. Smart Albums are not yet available at iCloud.com, nor in iOS. This seems like a missing piece instead of an intentional and permanent design choice, but it's hard to tell how Apple prioritizes.

Smart Albums are technically created as a search query, matching results and updating whenever photos are modified. Perhaps it imposes too much of a computational burden in iOS and on Apple's iCloud server? We can hope this changes in future releases. (If you're not seeing the same Smart Albums on all your synced-together Macs, there may be a syncing problem or you have the wrong library selected if you switch among them.)

The Bluetooth truth and more Wi-Fi troubleshooting

Once upon a time, Bluetooth was a quaint low-speed, low-bandwidth networking technology that appeared to be destined for the obsolescence pile. Several competing standards with broadcast industry support arose to challenge it with lower-power requirements, higher throughput, or both.

Bluetooth took heed of the motto of the Round Table (no, not that round table): “adopt, adapt, improve,” and won out by extending what it does and co-opting what others attempted

to provide (and failed to do).

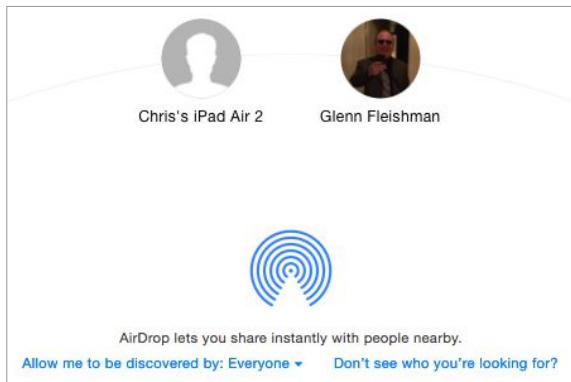
But this may be confusing when you're not using a Bluetooth peripheral, like a headset, headphones, or mouse, and wonder why iOS, your Mac, or your Apple Watch is complaining about its absence or not functioning as expected.

Is that you, Harald?

Reader and colleague Scholle wrote in wondering what had happened with AirDrop between Mavericks and Yosemite: why was Bluetooth suddenly required? Other readers (and your correspondent) regularly see problems with AirDrop, too.

The reason that the iOS and OS X versions of AirDrop lacked compatibility until Yosemite is that Apple used a special Wi-Fi mode in OS X, but opted for a different approach that combined Bluetooth and Wi-Fi in iOS. Yosemite switched to that version, though a backward-compatible option remains.

Bluetooth is used for signaling, or sending information related to forming a connection, passing control data (like performing an action) and the like between the same kind of devices and different ones. The Apple Watch uses Bluetooth 4.0, which has an extremely efficient low-energy mode, to communicate with an iPhone.



That limits the range the watch and an iPhone can be apart, but it also essentially makes the watch's battery life feasible at its current weight. Continuity in OS X and iOS also relies on Bluetooth to send tiny bits of detail. All of these devices switch to Wi-Fi for high-speed bulk data transfer using a Personal Area Networking (PAN) mode that allows an iOS or OS X device to remain connected to the Internet and transfer data with other Apple hardware.

If you're having trouble with getting AirDrop, Continuity features like Handoff, or your Apple Watch to work, you can try toggling Bluetooth and Wi-Fi on and off, and Airplane mode on a Watch or iOS device. In a house, one intervening wall made of signal-blocking material, like plaster over wire or brick, can also block Bluetooth's effectiveness even while

AIRDROP ON a modern Mac has a note at the lower right that seems obscure. Tap that link, and Yosemite switches to Wi-Fi—only scanning to pick up Lion and later Macs that don't use Bluetooth signalling.

Wi-Fi can still blast through it.

Roam if you want to, roam around your house

I'm repeating here in brief some hard-won Wi-Fi advice I mentioned in passing. Apple's base stations (and all current base stations I'm aware of from other makers) allow roaming by default. Choose a network name from any device, and all base stations with the same parameters and same network name will let you roam about.

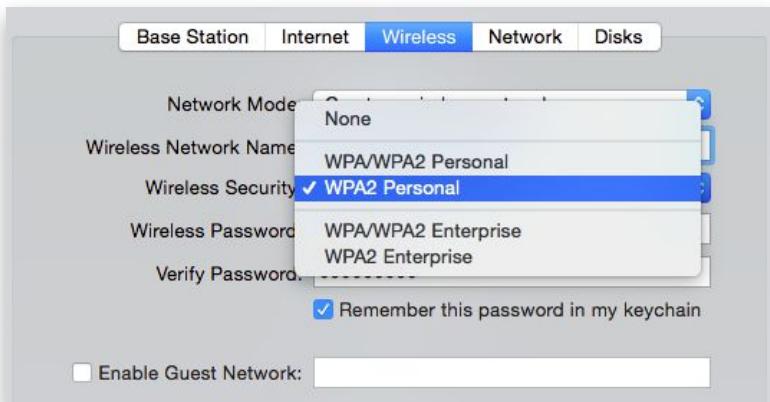
What I discovered—and what solved a problem that plagued me for almost two years—is that if you have different security methods that use the same network password, roaming works erratically rather than failing.

Far ago (about five-plus years ago), there were still plenty of bits of

hardware and computers that couldn't use the slightly newer WPA2 Personal encryption protocol. Plain old WPA had been designed to be backward-compatible with hardware that had shipped, including every computer released by Apple since 1999. But WPA2 required newer hardware, typically only working on base stations and clients from 2003 and later.

Apple solved this problem in its base stations by offering mixed WPA/WPA2 Personal encryption. Select this, and your newer devices would connect using WPA2, while older ones weren't left out. (If you find that pre-2004 Macs won't join a Wi-Fi network and don't provide an error, that's why: the network is WPA2-only and the Mac doesn't understand why it's being rejected.)

In my case, I had one base station



CHECK YOUR Wireless Security option: it should be identical (along with the password) on all base stations that you've named the same for roaming purposes.

that used an ancient configuration file that I'd kept transitioning over the years as I moved from one model to another of AirPort, even as I added two more base stations in the house connected via ethernet that I configured as passthrough. Macs and iOS devices sometimes lost a connection in one room of the house or strained to reach a base station several rooms away rather than the nearest one!

In helping to troubleshoot a wily Wi-Fi problem (go.macworld.com/wifip) weeks ago, I went into the innards of my base station to check my own settings, and, lo, there was terribleness.

If you launch AirPort Utility, select your base station, and click Edit, and then select the Wireless tab, you can see what security option is set. As you can see in the accompanying figure, while WPA/WPA2 Personal is an option in the Wireless Security menu, choosing it was my downfall because I had just WPA2 Personal enabled on two

Ask Mac 911

We're always looking for problems to solve! Email us at mac911@macworld.com, tweet them at me (if brief) @glennf, or call 206-337-5833 and leave a voicemail message. (We'll be experimenting with some audio in the future, and may put your question "on the air.")

Mac 911 can't provide direct email responses or answers for every question. For that, turn to Apple-Care, an Apple Store Genius Bar, or the Apple Support Communities.

other base stations.

When I switched that main base station to WPA2 Personal, all my roaming difficulties went away. If you're seeing similar strangeness, check that all your base stations use absolutely identical security settings. ■

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